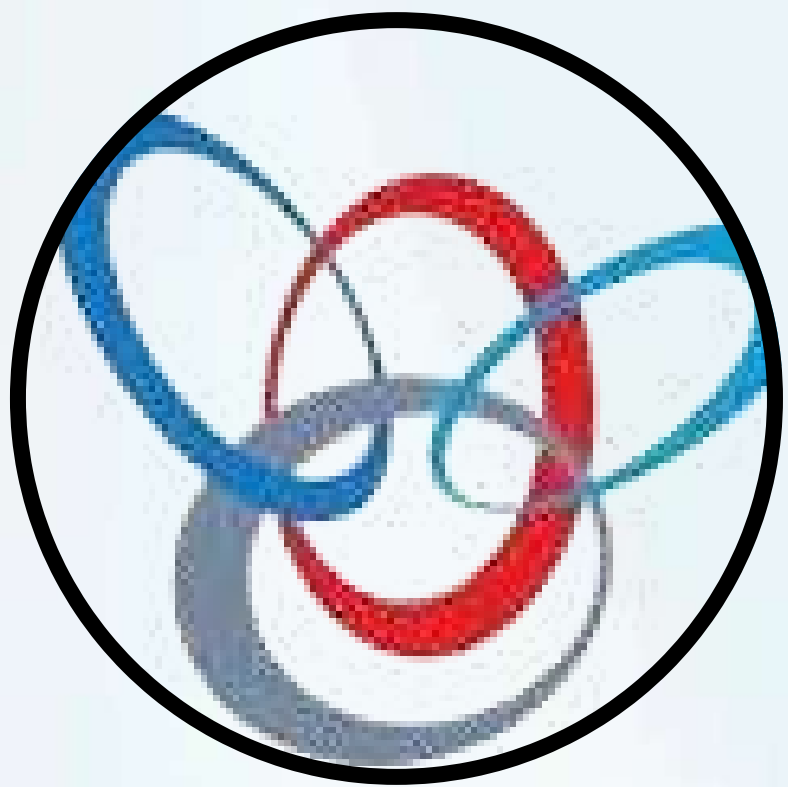


6th World Congress on
Dentistry and Oral Health

July 09-10, 2026 | Frankfurt, Germany



**Kolk Andreas¹, Longerich Ulrich², Palme Hanna³
Benjamin Walch⁴**

¹Department of Oral and Maxillofacial Surgery, Technical University of Munich, D-81675 Munich, Germany

²Academy for Virtual Planning, Orthodontic and Surgical Treatment of Facial Deformities, Orthodontic and Surgical Treatment of Facial Deformities, Karlsplatz 11, 80335 Munich, Germany

³Department of Ophthalmology, Medical University of Innsbruck, Anichstrasse 25, 6020 Innsbruck, Austria

⁴Department of Oral and Maxillofacial Surgery, Private Paracelsus Medical University of Salzburg, Salzburg, Austria

Initial risk assessment to identify severe ocular injuries in orbital fractures: A guide for oral and maxillofacial surgeons

A screening tool based on subjective and objective clinical symptoms was evaluated to identify severe eye injuries that may lead to vision loss. The study comprised 708 patients with orbital fracture. In addition to seven symptoms (pupillary reaction; reduction in visual acuity; restricted movement; visual disturbance; diplopia; pain on eye movement; and impossible examination because of severity of injury) the ocular and orbital injuries were analyzed from the medical history and classified as mild or severe. The extent and localization of the fracture were correlated with the CT images. Overall, 13.7% were affected by severe ocular injuries, which occurred regardless of age, season or cause of injury. There was a significantly higher risk if more than two orbital walls were fractured ($p = 0.003$). If the fracture course at the orbital floor extended into the posterior third, the risk increased by 38% ($p < 0.001$), with a combined fracture of the medial and posterior third even by 65% ($p < 0.001$). However, if only the anterior and medial thirds were involved, the risk of severe ocular injury was reduced by 11% ($p < 0.001$). In the case of a severe injury, an average of three, but at least one of the seven symptoms were positive, all of which correlated significantly ($p < 0.001$) with the severity of the injury. Unphysiological pupillary reactions were always associated with severe ocular injury. A sensitivity of 91% and a specificity of 72% could be achieved as a screening criterion when two of the seven parameters mentioned above were present. Among all patients, those with severe ocular damage could be identified relatively reliably. The proposed simple and consistent screening system offers a sound tool to predict the likelihood of a severe injury in emergency situations, enabling patient oriented and time-efficient treatment decisions.

Keywords: orbital fracture, ocular injuries, risk assessment

6th World Congress on
Dentistry and Oral Health
July 09-10, 2026 | Frankfurt, Germany

Biography

Andreas Kolk specialized in oral-maxillofacial surgery (OMFS). Since 2011 Andreas holds the position of an executive senior physician and since 2017 as the leading senior physician at the Department of Oral- and Maxillofacial Surgery of the TU Munich. In 2019 he was appointed as the chair of the Department of Oral and Maxillofacial Surgery at the Medical University of Innsbruck.

He is Fellow of the European Board of OMFS and an active member of the European Society for TMJ Surgery (ESTMJS) and of several national guideline committees. Andreas Kolk has written 8 book chapters and authored or co-authored over 155 journal papers with over 300 IP, given over 270 international scientific presentations and 34 international invited lectures.