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## Temporomandibular joint 3D analysis

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**Statement of the Problem:** The development and justification of the method of measuring the parameters of the TMJ. The technique of 3D analysis of the intra-articular spaces width, the size of the mandibular condyle, the height of the articular tubercle and its distal slope inclination is presented. The influence of repeated manual corrections of the condyles and articular fossa contours, shifting of the sectors measuring center, the position of starting point of the measurement sectors, different algorithms for determining the longitudinal axis of the condyles on the accuracy of TMJ parameters detection. The study showed that any artificial displacement of the center of measurement sectors, which coincides with the longitudinal axis of the condyle, leads to significant value changes of the parameters. In this regard, the exact determination of the longitudinal axis of the condyles, independent of the human factor, is of particular importance. The greatest inaccuracy and variability of the results of measuring the parameters of the TMJ, as shown by the study, is associated with the possible manual correction of the contours of the surfaces of the condyles and articular fossa. The study did not find a noticeable difference in measurements if the sectors starts from the top of the articular tubercle or from the line parallel to the Frankfurt horizontal.

### Biography

Alexander Ryakhovsky is a practicing prosthodontist, professor, holder of Habilitation degree in Medicine, Honored Doctor of the Russian Federation, Consultant of the Department of Prosthetic Dentistry in National Medical Research Center of Dentistry and MaxilloFacial Surgery. He is a developer of the software Avantis 3D. He defended his dissertation for the degree of Doctor of Medical Sciences in 1992. Over the years, he has published about 300 printed works, including 10 monographs, which have both a scientific and practical focus. The receipt of 30 patents marks the inventive activity of Ryakhovsky A. N. Professor Ryakhovsky Alexander Nikolaevich, as a world-class specialist in dentistry, is known both in Russia and abroad. He prefers to perform his work flawlessly, conduct advanced training courses for doctors, and teach students. During his fruitful work, he returned the joy of an open smile to thousands of patients.