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REPRODUCIBILITY OF NATURAL HEAD POSITION

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Introduction. Natural head position (NHP) is standardized position of the head in an upright posture, the eyes focused on a point in the distance of eye level. An incorrect head position will undoubtedly lead to errors in diagnosis and choice of treatment plan, especially when it comes to planning of orthognathic surgery, when head tilt can camouflage the true position of lower jaw. Modern cephalometric analysis is based on assessment of cranio-facial structures to relative planes. However, according to McNamara there are variations in inclination of reference lines. The concept of natural head position was introduced to orthodontics in the 1950s by Moorees and Kean. Despite its importance, the concept of head positioning in facial aesthetics evaluation is often underestimated.

Aim: to assess the reproducibility of natural head position.

Materials and methods. We analyzed the sample of 10 students of Belarusian state medical university (3 male and 7 female, 23 to 27 years old). Natural head position of studied objects was fixed with DSLR camera Canon installed on tripod. To achieve NHP the object made one step forward looking straight in the mirror in eyes reflection. A vertical axis was photographically recorded with the help of plumb line. We made photos of studied objects twice with 10 minutes interval. T0- as first recording, T1- as second recording after 10 minutes. Keynote software was used to find the head position differences.

Results and discussion. Based on literature analysis, reproducibility of natural head position has an error of 2 degrees in average. According to our research, differences in head position of studied objects in T0 and T1 was 0,47° in average. The range of differences varied from 0° to 1.6°. As the result we have achieved high reproducibility of natural head position as the most physiological habitual head position, and true horizontal and vertical lines can be used as reference planes for assessing the aesthetics of face, mandible and teeth.

Conclusions. Method of assessment of natural head position demonstrated high efficiency and must be used in cephalometric analysis, photo recordings for orientation of the patient and successful soft tissues analysis. Natural head position is the key for correct orthodontic treatment planning.