



STUDYING THE CEPHALOMETRIC NORMS OF THE UZBEK POPULATION

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Annotation: The study was conducted on a sample of 30 men and 30 women of the Uzbek population aged 18-25 years. Samples were selected based on a class I dental relationship with no history of trauma, reconstructive surgery, and history of orthodontic treatment. Analysis of the cephalogram showed a statistically significant difference in data for the Uzbek population. These data allow diagnosing and planning orthodontic treatment of the population of Uzbekistan.

Key words: Uzbek population, cephalometric norms, TRG.

ИЗУЧЕНИЕ ЦЕФАЛОМЕТРИЧЕСКИХ НОРМ УЗБЕКСКОЙ ПОПУЛЯЦИИ

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Аннотация: Исследование проводилось на выборке из 30 мужчин и 30 женщин узбекского населения в возрасте 18-25 лет. Образцы были отобраны на основе стоматологических отношений I класса без травм в анамнезе, реконструктивных операций и ортодонтического лечения в анамнезе. Анализ цефалограммы показал статистически значимую разницу данных для узбекского населения. Эти данные позволяют диагностировать и планировать ортодонтическое лечение населения Узбекистана.

Ключевые слова: узбекская популяция, цефалометрические нормы, ТРГ.

INTRODUCTION

Rational orthodontic and orthopedic treatment with the restoration of the anatomical shape and compliance with aesthetics is an urgent task of dentistry. Creating an individual feature of the teeth and jaws to achieve the maximum aesthetic effect is impossible without taking into account the race of the individual. There are a number of sufficiently substantiated scientific works that establish the age, gender, race of a person, as well as identify individual characteristics that help to establish the identity of a person, which is part of the task of forensic medical examination (Athanasίου A. Orthodontic Cephalometry, London, England: Mosby-Wolfe; 2007).

Ethnic difference has long been a special object of study only for anthropologists and paleontologists. As a result of the study, a large amount of material was accumulated, proving the ethno-diagnostic value of the structure of the human dentition. Similar racial-ethnic, anthropological and dental studies have become more often carried out in the CIS countries (Ismagulov O., Sihimbaeva K.B., 2012; Sanzhitsyrenova T.I., 2017; Abdurazakov E.Kh., 2016).

At the same time, there is not enough data in the medical literature on the distinctive features of the dentoalveolar system in representatives of various ethnic groups used for the purpose of orthodontic correction of the dentoalveolar system and dental prosthetics. All this dictates the need for a more in-depth study of the anatomical and morphological features of teeth and jaws in various ethnic groups in order to individualize the results of orthodontic treatment and dental prosthetics.

In modern dentistry, the importance of aesthetics has increased. To achieve the greatest effect, the principles of individualization of appearance are used, taking into account the individual characteristics of a person, which imply, first of all, the racial and ethnic characteristics of the individual. Along with the general morphological features described in dentistry, there are many signs, details, correlations of shapes and surfaces that give a person individuality, originality, sophistication, aesthetics and racial affiliation.

In this regard, it is important for a dentist to identify clear criteria for the odontological and cephalometric features of an individual, depending on ethnicity, which will make it possible to carry out orthodontic treatment of anomalies and deformities of the dentoalveolar system and make dentures taking into account race.



Diagnosis and treatment planning of orthodontic and orthopedic patients is now successfully carried out thanks to the cephalometric analysis of teleroentgenograms (TRG). The analysis allows to obtain reliable characteristics of the size of the jaw bones, the relationship between the jaws and their relationship to the base of the skull, relationship between bone and soft tissue reliefs.

Linear and angular indicators have not only age and gender determination.

The "geography" of cephalometric analysis is extensive: it is carried out according to the methods of Schwartz, Tweed, Downes, Steiner, McNamara, Kim, and others and was developed for the German, American and Korean population. Ethnic characteristics of the structure of the facial skull are different and specific.

PURPOSE OF THE STUDY

The study of teleroentgenograms and the determination of cephalometric norms for the Uzbek population.

MATERIAL AND METHODS

The material for the study was the lateral TRG of 25 boys and 25 girls aged 18 to 25 years.

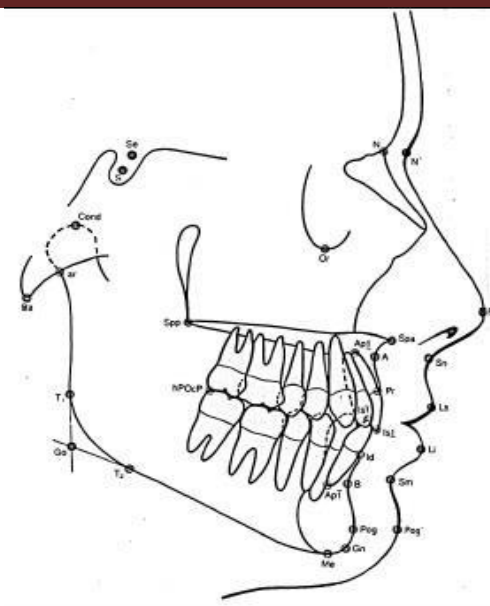
The selection to the control group was carried out on the basis of the following indicators:

- 1) neutral ratio of the first permanent molars and canines;
- 2) overlapping of the upper incisors no more and no less than 1/3 of the crown height of the lower incisors;
- 3) a complete set of permanent teeth (the presence and / or absence of third molars is not necessary);
- 4) no visible skeletal problems;
- 5) satisfactory profile;
- 6) no history of injuries and reconstructive operations in the maxillofacial region.

All cephalograms were taken on the same setup under standard conditions, at a standard distance, with the natural position of the head, and the relaxed state of facial muscles (lips, cheeks). The head was fixed in a cephalostat.

The analysis of cephalograms was carried out manually by one person in a standardized way, with a pencil 0.5 mm thick. Taking into account gender differences in the structure of the facial skeleton, the indicators were determined separately for boys and girls. Age from 18 to 25 years was chosen taking into account the end of active growth of the jaw bones.

All data were analyzed using the Statistical Package for the Social Sciences.



Pic.1. Scheme of cephalometric points used in the study.

RESULTS AND DISCUSSION. The average value of skeletal characteristics in the individuals examined by us statistically significantly correlates with the standards of the Caucasian race with a slight trend towards a horizontal type of growth (Table 1)

Table 1. Skeletal parameters of TRG for the Uzbek population

Options	Means and standard deviation	
	men	women
SNA angle	82,97±3,28	80,20±3,42
SNB angle	81,50±3,24	79,10±3,9
ANB angle	1,50±1,48	1,10±2,12
Go-GN to SN degree	24,60±4,61	27,70±4,56
Y-Axis	63,23±2,72	65,23±3,77
AFH, mm	125,70±6,15	154,30±178,96
PFH, mm	88,67±7,03	80,77±5,12
Jarabak, %	70,60±5,20	66,90±4,03

The average values of dentoalveolar parameters in our population, both in boys and girls, tend to a horizontal type of growth (Table 2).



Table 2

Options	Means and standard deviation	
	men	women
Interincisal angle	122,00±10,83	122,03±8,58
U1 to SN, deg	111,27±7,21	108,87±8,13
U1 to NA, deg	28,67±6,48	29,00±7,77
U1 – NA, deg	7,77±3,49	6,57±3,01
L1 – NB, deg	28,53±6,56	27,77±5,63
L1 – NB, mm	6,10±2,74	5,67±1,83
IMPA	102,20±7,70	101,83±5,93

The indicators of soft tissue characteristics in the examined girls and boys are shown in Table 3.

Table 3. Soft tissue TRG parameters for the Uzbek population

Options	men	women
Nasolabial angle	92,63±11,72	95,07±9,28
E-line	0,80±3,42	2,78±2,73

The indicators of the nasolabial angle and the aesthetic line, according to our data, statistically differ significantly in men and women, which determines a lower and convex position of the lips for girls.

CONCLUSION

Most of the cephalometric analyzes used in orthodontic diagnostics are adapted to the Caucasoid population. The literature describes rates for African, Chinese, Indian and other ethnic groups. The skeletal, dentoalveolar, and soft tissue characteristics of some populations may not be the norm for others.

Thus, the definition of criteria for the cephalometric analysis of the Uzbek population will help to amend the existing standards and make it possible to carry out diagnostic methods for planning successful orthodontic treatment, taking into account the ethnic skeletal, dentoalveolar and soft tissue characteristics of our population.

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