

EFFICACY OF CEPHALOMETRIC NORMS AS A PREDICTABLE METHOD FOR SOFT TISSUE POSITIONING AND FACIAL AESTHETICS AFTER ORTHODONTIC-ORTHOGNATHIC INTERVENTIONS

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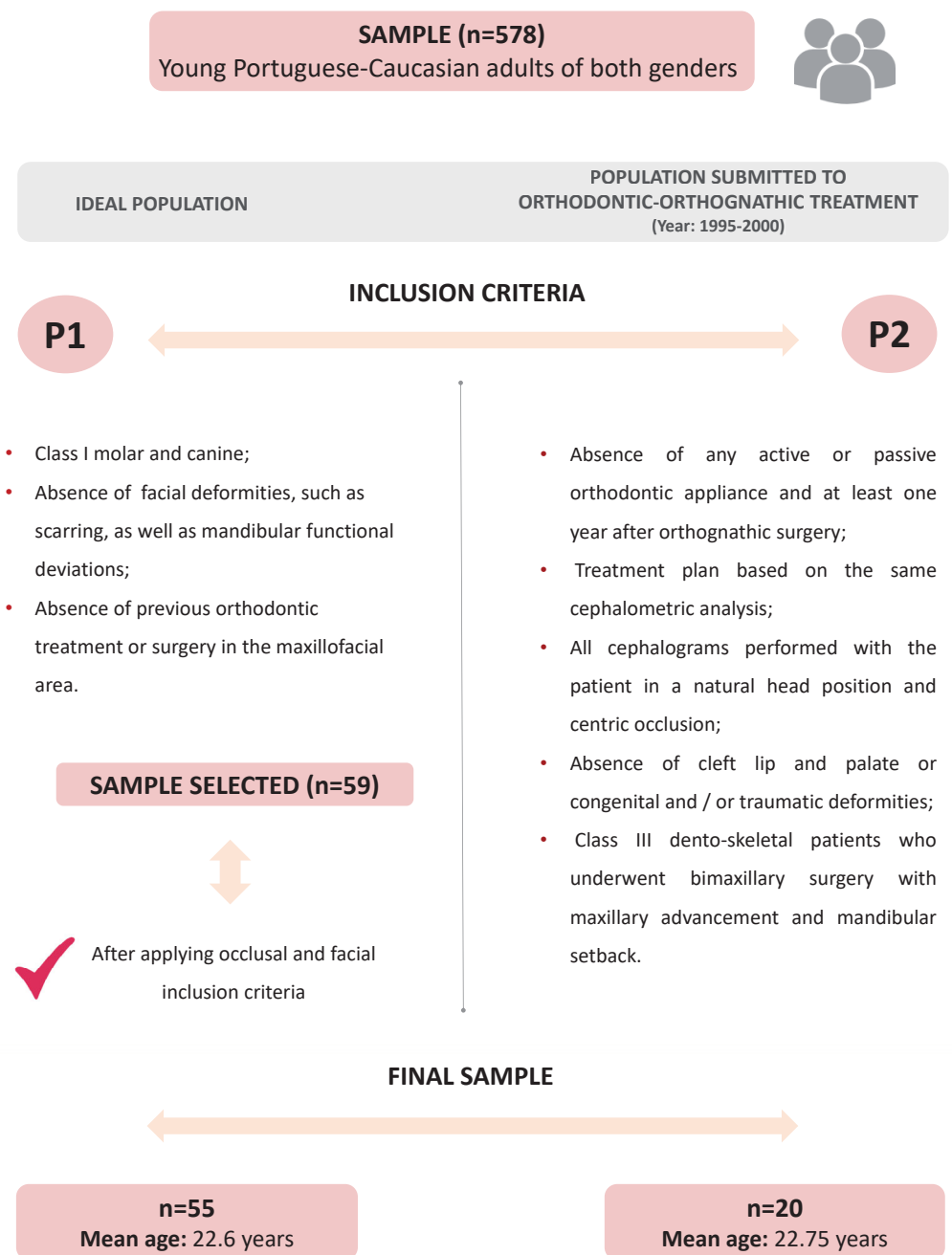
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INTRODUCTION

One of the most important aspects in orthodontic diagnosis and treatment planning is the evaluation of the soft tissue profile and the determination of the dento-skeletal position in order to reach maximum facial aesthetics¹. **THE AIM** of this study is to verify whether there are morphological differences in the soft tissue profile between individuals submitted to orthodontic-orthognathic treatment and individuals belonging to an aesthetically ideal population.

MATERIALS AND METHODS



RESULTS

The cephalometric analysis was performed using *Dolphin Imaging Software/32* (High Quality Digital Imaging Software for Orthodontics, Cosmetics and Medical Imaging, version 8.0.6.12 of Dolphin Imaging Systems Inc., USA), and the cephalometric points used were mainly obtained from the cephalometric atlas of Miyashita and Dixon (1996). For the statistical analysis of the obtained data, a *Student's t* distribution was used and a significance level 5% was adopted (**Table 1**).

Variable	IDEAL SAMPLE		SAMPLE SUBMITTED TO ORTHODONTIC-ORTHOGNATHIC TREATMENT		P
	Mean	S.D.	Mean	Mean	
TVL:Pn (mm)	16.50	2.35	15.68	2.58	0.0991 nss
TVL:A' (mm)	-1.17	0.93	-1.13	0.94	0.4237 nss
TVL:LS (mm)	2.64	1.90	1.82	1.95	0.0500*
TVL:Mx1 (mm)	-11.38	2.90	-10.23	3.26	0.0765 nss
TVL:Md1 (mm)	-14.37	2.95	-12.84	3.27	0.0308*
TVL:LL (mm)	0.93	2.56	0.99	2.60	0.4656 nss
TVL:B' (mm)	-7.59	3.57	-5.50	3.86	0.0168*
TVL:Pg' (mm)	-4.47	4.77	0.30	4.94	0.0002**
LS-Sn-Cm (°)	109.14	8.55	105.13	12.28	0.0614 nss
TVL-Sn-LS (°)	1.49	7.62	1.01	9.53	0.4114 nss
LL:LS	1.71	1.76	0.83	1.50	0.0267*
A':B' (mm)	6.41	3.62	4.36	3.63	0.0177*
GI'-Sn-Pg' (°)	160.85	46.94	144.01	101.94	0.1700 nss
GI':A' (mm)	9.41	6.05	6.84	5.76	0.0542 nss
GI':Pg' (mm)	6.24	8.46	8.26	10.12	0.1976 nss
S-n-A (°)	82.91	3.58	83.82	3.82	0.1747 nss
S-n-B (°)	80.24	3.11	83.43	3.52	0.0002**
A-n-B (°)	2.67	1.78	0.39	1.72	0.0000**
S-n-Pg (°)	81.02	3.22	85.67	3.48	0.0000**

Table 1: Comparison between the ideal sample and the sample submitted to treatment. SD (standard deviation); nss (no statistical significance)

DISCUSSION

Among the variables that represent the upper and middle thirds of the face, only TVL: UL (True Vertical Line: Upper Lip) characterizes the upper lip in the posterior-anterior plane. These variables were significantly different between the two populations ($\alpha=0.05$). In the lower third of the face, the variables are almost all significantly different between the populations ($\alpha \leq 0.05$).

In the sample submitted to treatment, the position of the jaw and soft tissue are still in a more advanced position in the sagittal plane, despite the setback imposed by sagittal osteotomy for surgical treatment. The data show that the population with malocclusion and class III skeletal relationship, despite having clinical success in the orthodontic-surgical treatment, maintains a "prognathic" profile, with a retruded upper lip and protrusion of both lower lip and chin. This finding alerts to the deficiencies of cephalometric analysis based exclusively in dento-skeletal norms²⁻⁷.

CONCLUSION

Considering that the cephalometric norms obtained in this study, between 1995 and 2000, are the ideal for the Portuguese population, then orthodontic and/or orthodontic-orthognathic interventions based on dento-skeletal norms are not enough to obtain good facial aesthetics.

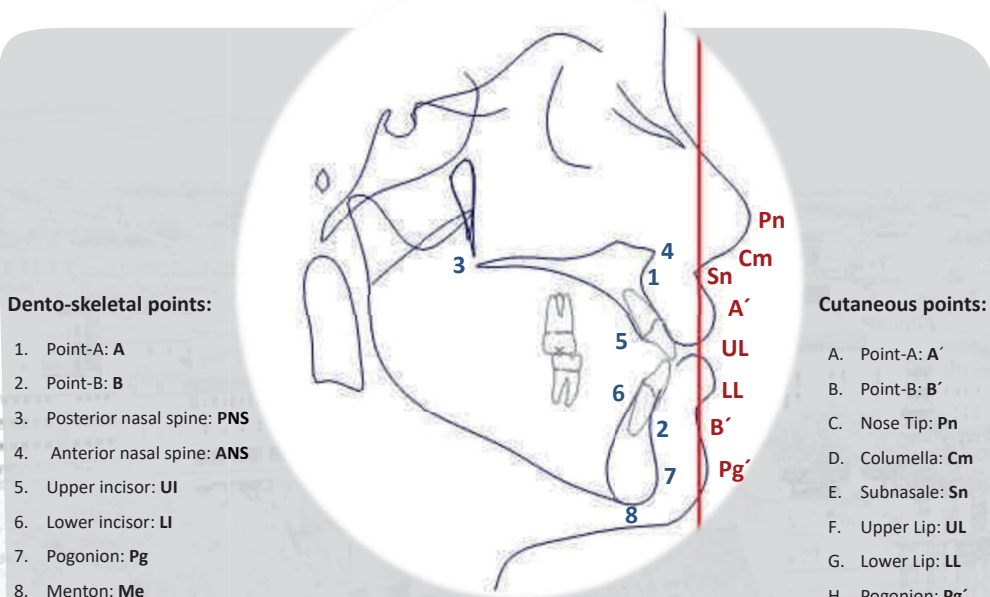


Fig.1: Cephalometric landmarks (dento-skeletal and cutaneous)