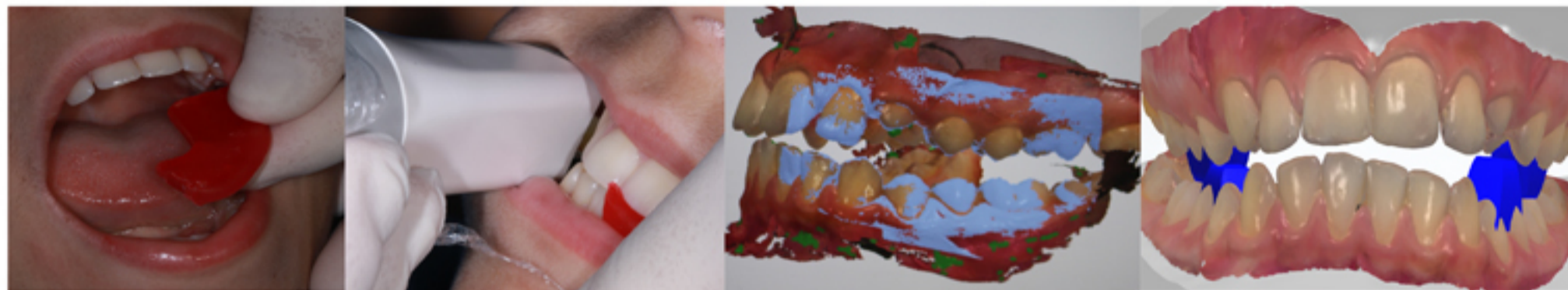


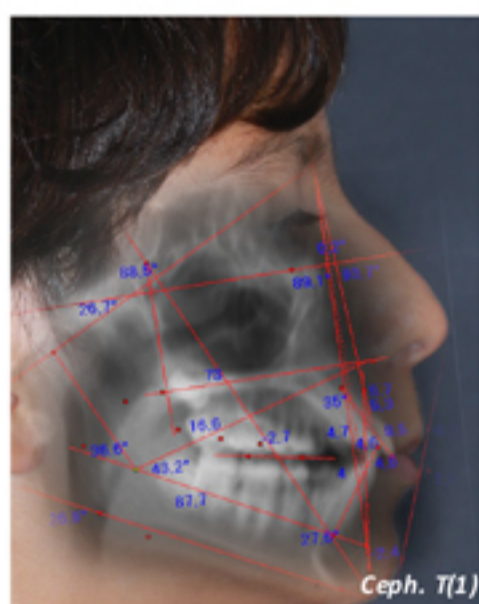
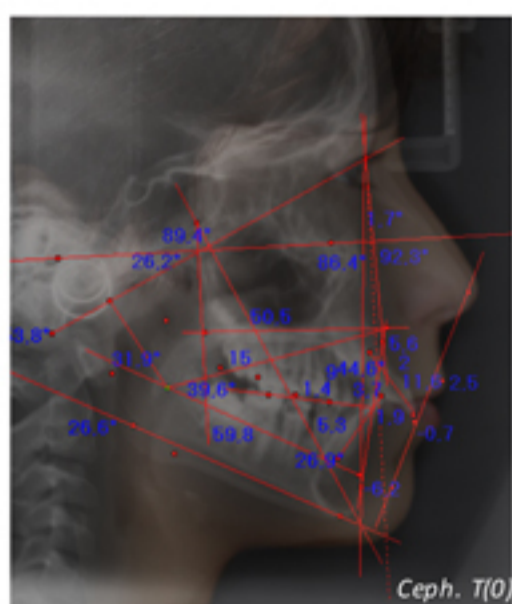


# INVISIBLE TWIN-BLOCK

**Aim:** the aim of this orthopedic - functional treatment was to perform a mandibular advancement using a custom-made and aesthetic device, obtained through a complete digital workflow in a 13-year-old patient with a skeletal Class II malocclusion at its growth peak. The functional device created in collaboration with the digital laboratory has been designed to combine the advantages of traditional Twin-Block with the comfort of transparent aligners.



**Materials and methods:** the patient with skeletal Class II malocclusion was selected, characterized by mandibular deficiency and proinclination of the superior frontal teeth, after analysing latero-lateral telerradiography, orthopantomography and virtual 3D digital scanning models. The wax construction bite was detected in progression, cut into two symmetrical parts allowing the occlusion scan from the contralateral side. The scan was sent to the laboratory that modified the file by applying two indined planes of about 70° on the lower arch parallel to each other, considering the construction bite. After evaluating that the inclined planes did not interfere with the occlusion, we proceeded with the realization of the superior, perfectly specular antagonist planes. The project file was sent to the 3D printer to be prototyped. On the medical resin models obtained, thermoplastic printing of the modified aligners was carried out with the surfaces filled in medical resin, to resist functional wear. The patient was monitored with intra and extra-oral photographs at 1, 3 and 4 months and a new latero-lateral at 7 months T(1), for the comparison of cephalometric data.



Cephalometric analysis	Expectation		Reality	
	T(0)	T(1)	T(0)	T(1)
Mandibular body length	69,2	72,4	59,8	87,7
OVJ	2,5	2,5	9	4,7
OVB	2,5	2,5	5,3	4

Tab.1

**Results:** The clinical and cephalometric evaluation showed a Class II correction for mandibular advancement with reduction of Overjet and Overbite (tab.1).

**Conclusions:** The Invisible Twin-Block device allowed correction of Class II malocclusion due to mandibular advancement. Extremely positive results have been guaranteed by the remarkable patient compliance stimulated by the aesthetics and comfort of the device.