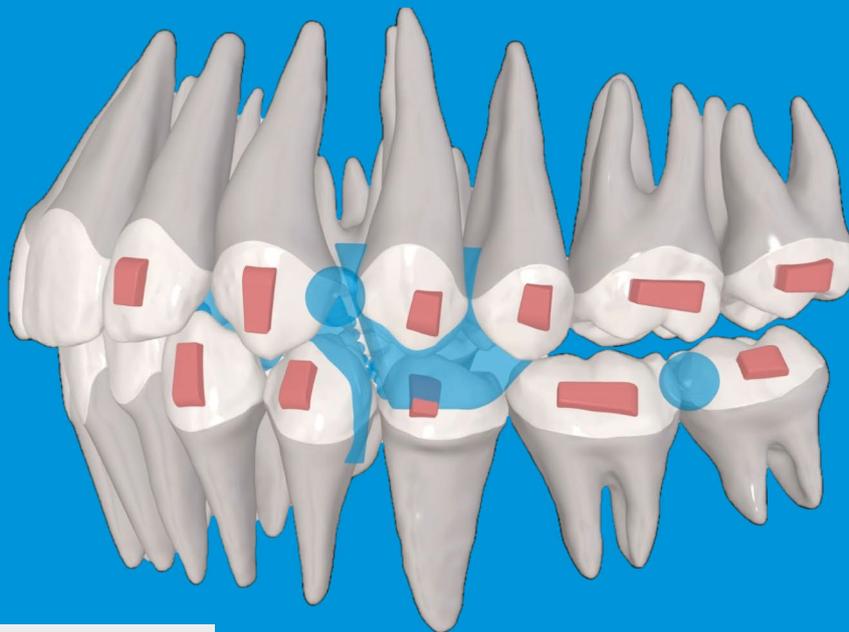


## Case Report

### Correction of Class II Division 2 Malocclusion in Growing Patients using A6 Mandibular Advancement



**Dr. Isabel Flores Allen**  
Orthodontist

No need to hide your smile  
Angel Aligner is here



# A6 Mandibular advancement

## Introduction

Angel Aligner A6 Mandibular Advancement is a groundbreaking solution that combines orthopedic and orthodontic treatment into a single, efficient process. Unlike traditional approaches that often involve separate phases for jaw growth modification and tooth alignment, A6 seamlessly integrates both aspects. By incorporating strategically designed occlusal blocks into the aligners, A6 gently guides the mandible forward while simultaneously correcting tooth malposition and refining the bite. This innovative approach not only streamlines treatment but also enhances patient comfort and compliance by minimizing the need for multiple appliances and frequent adjustments.

The orthopaedic and orthodontic treatment of the convex anomaly caused by mandibular deficiency is a breakthrough point to correct the bone deformity and complete the correction of tooth malposition and achieve bite reconstruction. Open the bite by forming an occlusal block to complete the correction and alignment of the malpositioned teeth. The treatment phase is combined into one, which greatly improves the treatment efficiency and reduces the course of treatment.

**Indication suggestion: all cases suitable for the use of Twin-Block appliances.**

Note: the following indications are for clinicians' reference only. Whether the specific cases are suitable for using A6 solution is determined by clinicians.

1. Mainly suitable for children and adolescents during the period of growth and development.
2. Functional class II malocclusion.
3. Mild to moderate skeletal class II malocclusion.

## Indication

## Diagnostic analysis of indications

### Age

**Mainly suitable for children and adolescents during the period of growth and development:**

- **Rapid growth period:** girls 9-10 years old, boys 11-12 years old
- **Growth peak:** girls 11-13 years old, boys 14-15 years old
- **Growth deceleration period:** girls 14 years old, boys 16 years old

### Functional Class II malocclusion

**There may be intraoral occlusal Interference:** maxillary arch stenosis, lingual inclination of maxillary anterior teeth, individual tooth crossbite, individual tooth lingual malposition, buccal crossbite, etc.

**Accompanied by bad lip and tongue habits and muscle function disorders:** biting the lower lip (upper anterior teeth proclined, lower anterior teeth lingually tipped), mouth breathing, etc.

### Mild to moderate skeletal Class II malocclusion

**Anteroposterior:** skeletal class II malocclusion - the maxilla is basically normal or with mild protrusion, the mandible is underdeveloped or the position is backward, and the profile is improved after mandible protrusion.

**Vertical:** average-angle or low-angle; used in high-angle cases with caution; the lower third is slightly shorter.

- Section
- Product
- Malocclusion
- Protocoles and features

Class II division 2 malocclusion

Select Unlimited

Class II division 2 with deep bite

A6 Mandibular advancement



### BIO Isabel Flores Allen

Dr. Isabel Flores Allen holds a degree in Dentistry, with postgraduate training and specialization in Orthodontics from CESPU University (Portugal). She also completed a Clinical Residency in Orthodontics at the University of Michigan (USA). She serves as Guest Professor in the Postgraduate Programs in Clinical Orthodontics and Introduction to Orthodontics at CESPU. Dr. Flores Allen is CEO & Clinical Director of IFA Clinic in Portugal and holds DHA licensure in Orthodontics, also practicing in Dubai. She was President of the Portuguese Society of Dental Aligners from 2018 to 2025, served as an Invisalign Speaker between 2017 and 2023, and has been a Key Opinion Leader for Angel Aligner since 2024. Dr. Flores Allen actively participates in international congresses, courses, and study clubs.

## Patient introduction

- Age
- Gender
- Treatment time
- Number of aligners

13 years old

Male

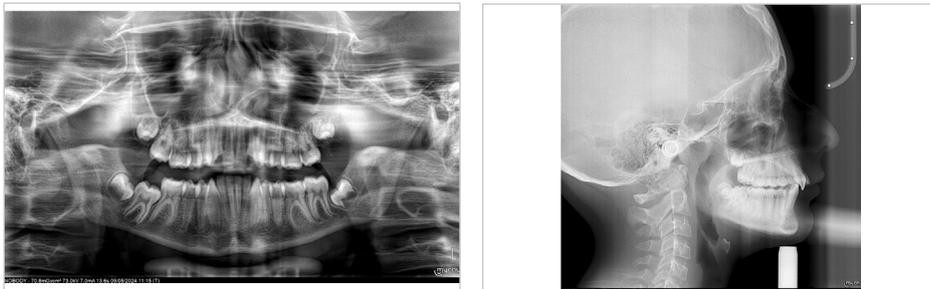
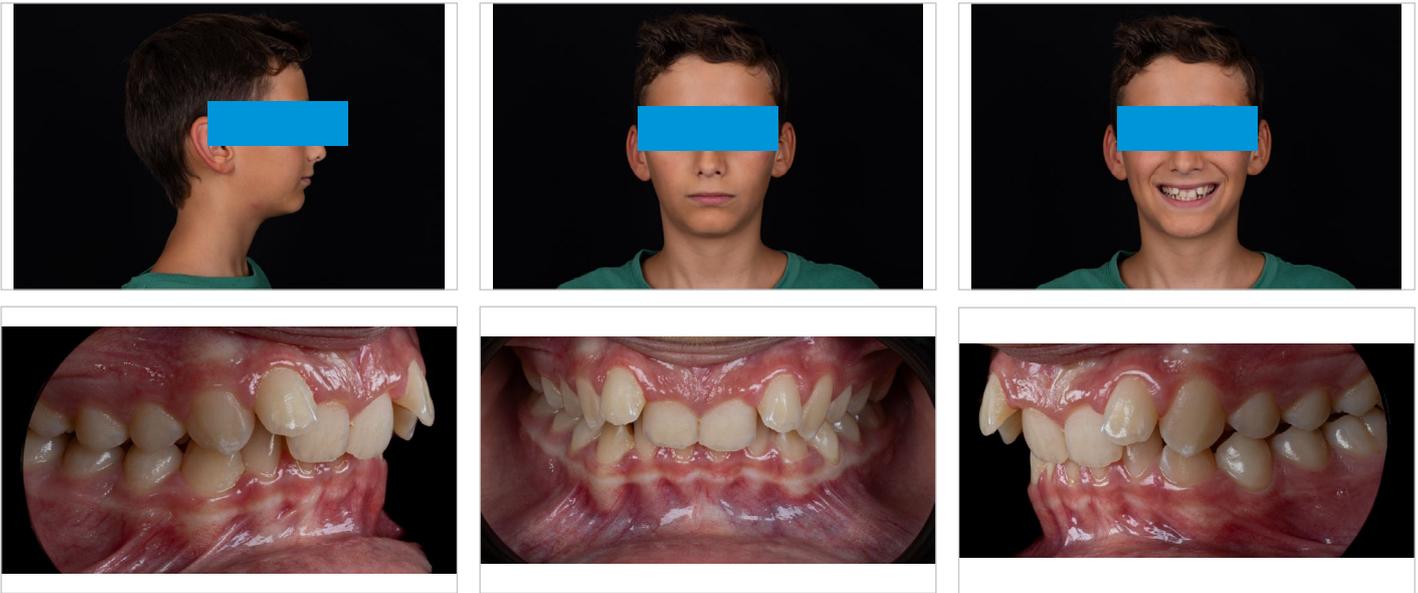
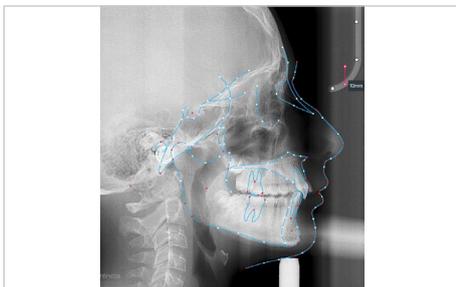
10 months

45

### Chief complaint

The patient's primary concerns were the gummy smile associated with a deep bite, and the limited space available for anterior alignment. He also expressed dissatisfaction with the position of the maxillary lateral incisors, describing them as being positioned "too high."

Initial Photos  
and datas

Análise de dados		
Medição	Normal	Valor
S-N/ANS-PNS	8.0±3.0	11.3 ↑
S-N/Go-Gn	33.0±2.5	34.28
ANS-PNS/Go-Gn	25.0±6.0	22.98
U1-ANS-FMG	110.0±6.0	90.99 ↓
L1-Go-Gn	94.0±7.0	93.85
L1-A-Pg(mm)	2.0±2.0	-0.37 ↓
Overjet(mm)	3.5±2.5	2.39
Overbite(mm)	2.0±2.5	5.24 ↑
U1-L1	132.0±6.0	144.18 ↑



## Clinical examination and diagnosis

### CLINICAL EXAMINATION:

A 13-year-old male patient presented with a deep bite, characterized by near-complete coverage of the mandibular incisors. Clinical evaluation revealed bi-arch crowding, dental rotations, and proclination of the maxillary lateral incisors, contributing to the patient's esthetic concerns. The facial profile was retrusive, consistent with mandibular retrognathism, and no significant periodontal abnormalities were detected.

### DIAGNOSIS:

The patient presented with a skeletal Class II relationship with bilateral molar and canine Class II and a Class II division 2 dental pattern. The deep bite was associated with anteroinferior crowding and an accentuated Curve of Spee. Facial analysis revealed good symmetry, a slightly increased lower facial third, and a convex profile characterized by mandibular and chin retrusion. Lip competence was mildly reduced, with a decreased nasolabial angle and mentalis hyperactivity, all of which compromised overall facial harmony.

## Treatment plan

The treatment followed the Angel Aligner A6 mandibular advancement protocol, with the primary objective of achieving early correction of the sagittal discrepancy while simultaneously addressing dental alignment and transverse coordination.

The plan included:

- Initiation of mandibular advancement from the 4th aligner using mandibular advancement blocks;
- Arch expansion to resolve crowding and improve transverse coordination;

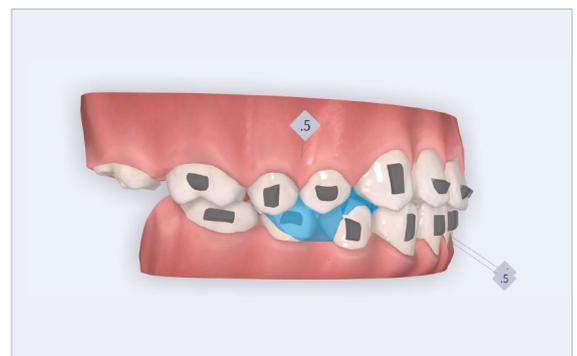
- Selective interproximal reduction in the mandibular anterior region to create space and control incisor inclination;
- Programmed intrusion of the maxillary central incisors to reduce the gingival display and correct the gummy smile;
- Intrusion of mandibular incisors and canines to level the Curve of Spee;
- Use of Class II elastics on Angel Buttons during the refinement phase to reinforce sagittal mechanics, introduced during the additional aligners stage.

## Treatment details

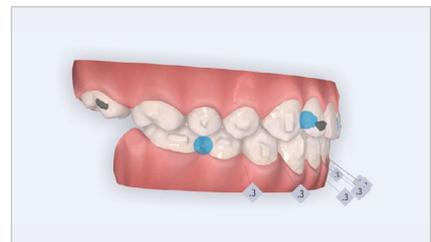
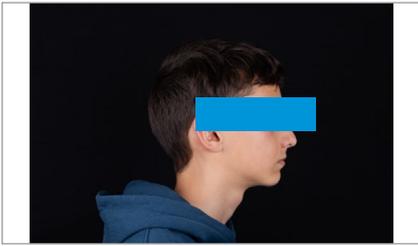
The treatment was carried out using Angel Aligner clear aligners, with strict adherence to periodontal biological limits. Both maxillary incisor intrusion and transverse expansion were carefully monitored throughout the process to prevent any periodontal compromise. Mandibular advancement was initiated directly from the 4th aligner using advancement blocks, eliminating the need for a preliminary pre-advancement phase. The patient was at the CS3 stage of cervical vertebral maturation, corresponding to the pubertal growth spurt, a biologically favorable period for condylar

remodeling and skeletal adaptation. A total of 35 aligners with advancement blocks were used, followed by 10 additional aligners incorporating Class II elastics on Angel Buttons to finalize rotations and alignment. With weekly aligner changes, the overall treatment duration was approximately 45 weeks (10 months), aligning with the expected biological timeline for condylar remodeling. For mandibular anterior intrusion, the Frog Protocol combined with interproximal reduction (IPR) achieved complete leveling of the Curve of Spee.

## Treatment setup

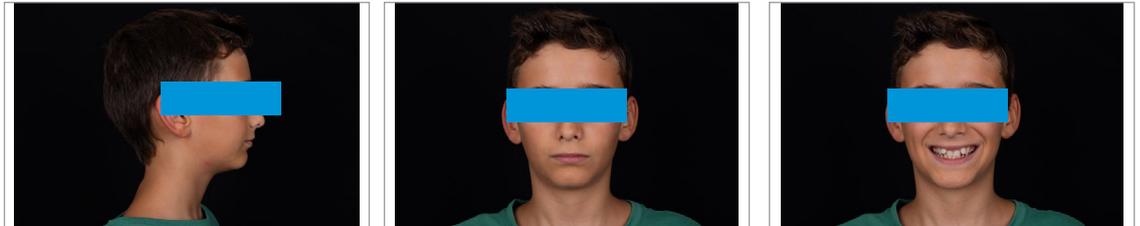


Treatment progress



## Treatment results

Before treatment



After treatment



Before treatment



After treatment



Before treatment



After treatment

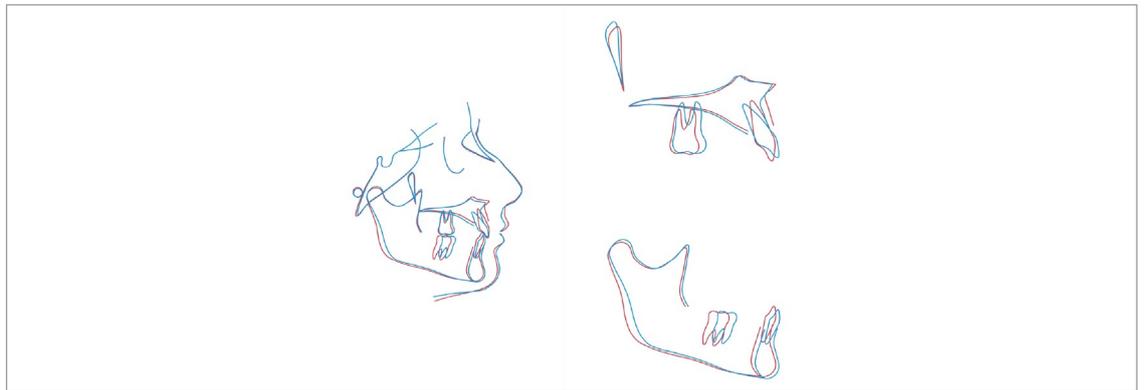


## Treatment results

Before treatment



After treatment



Análise de dados			EBO
Medição	Normal	Valor	
S-N/ANS-PNS	8.0±3.0	11.3 ↑	1
S-N/Go-Gn	83.0±2.5	34.28	
ANS-PNS/Go-Gn	25.0±6.0	22.98	
U1-ANS-PNS	110.0±6.0	98.99 ↓	1
L1-Go-Gn	94.0±7.0	93.85	
L1-A-Pg(mm)	2.0±2.0	-0.37 ↓	1
Overjet(mm)	3.5±2.5	2.39	
Overbite(mm)	2.0±2.5	5.24 ↑	1
U1-L1	132.0±6.0	144.18 ↑	1



Análise de dados			EBO
Medição	Normal	Valor	
S-N-A	82.0±3.5	75.96 ↓	1
S-N-Pg	80.0±3.5	75.37 ↓	1
A-N-Pg	2.0±2.5	0.58	
S-N/ANS-PNS	8.0±3.0	12.12 ↑	1
S-N/Go-Gn	33.0±2.5	34.18	
ANS-PNS/Go-Gn	25.0±6.0	22.06	
U1-ANS-PNS	110.0±6.0	114.22	
L1-Go-Gn	94.0±7.0	95.44	
L1-A-Pg(mm)	2.0±2.0	1.56	
Overjet(mm)	3.5±2.5	2.26	
Overbite(mm)	2.0±2.5	1.66	
U1-L1	132.0±6.0	128.28	



## Treatment experience

The A6 protocol allowed a progressive and well-tolerated mandibular advancement, eliminating the need for a pre-advancement phase. The patient adapted quickly to the advancement blocks and showed excellent compliance with both aligners and elastics.

Digital planning ensured predictable, biologically safe tooth movements, while the Frog Protocol effectively leveled the Curve of Spee. The mandibular response corresponded well with the patient's growth stage (CS3). Overall, the treatment was stable, comfortable, and efficient, achieving functional, aesthetic, and skeletal objectives, and confirming the effectiveness of the A6 protocol in growing patients.

Patient compliance—particularly with elastic wear and daily aligner use—was crucial to treatment success.







**Case Report**  
**Correction of Class II Division 2 Malocclusion in Growing Patients**  
**using A6 Mandibular Advancement**

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