

SEMILLERO DE ORTODONCIA

# ORTODONCIA INTERCEPTIVA

UNIVERSIDAD NACIONAL PEDRO HENRÍQUEZ UREÑA  
ESCUELA DE ODONTOLOGÍA

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Eliseo Ovalle



## ESQUEMA

**TIPOS DE  
ORTODONCIA**

**ENFOQUE**

**MOMENTO DE  
INTERVENCIÓN**

**HERRAMIENTAS  
DE  
DIAGNÓSTICO**

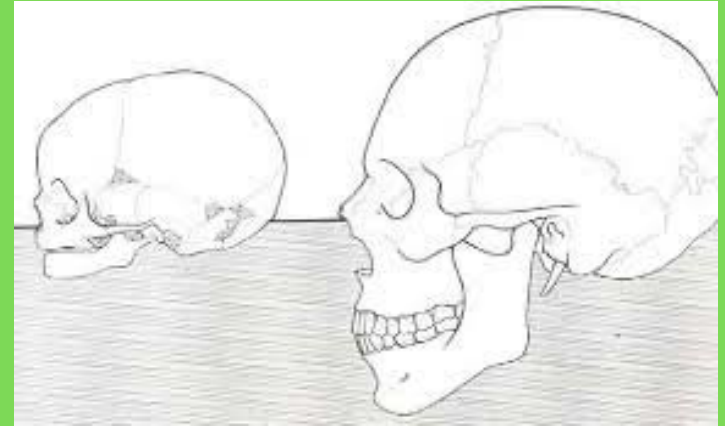
**PROBLEMAS A  
TRATAR**

**TRATAMIENTOS  
CON APARATOS**

**BENEFICIOS**

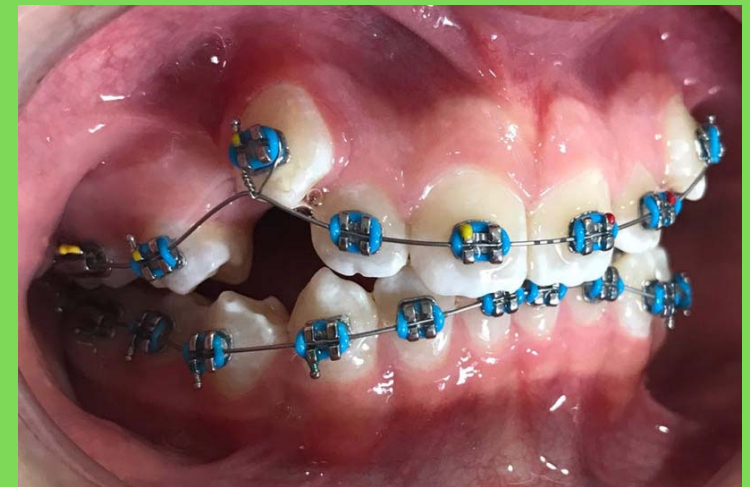
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# ORTODONCIA



Es la rama dentro de la odontología encargada del estudio, diagnóstico y tratamiento de las discrepancias maxilares.

Especialidad que se encarga de tratar las anomalías de posición, relación y función de las estructuras dentales.





# CLASIFICACIÓN

## ORTODONCIA PREVENTIVA

Su finalidad es prevenir mayores problemas dentarios en el futuro.

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## ORTODONCIA INTERCEPTIVA

Tratamiento temprano de una maloclusion para impedir la progresión de la misma.

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## ORTODONCIA CORRECTIVA

Tratamiento de maloclusion con aparatología fija correctiva (brackets y aparatos auxiliares) en dentición permanente.

# ORTODONCIA INTERCEPTIVA

LA CIENCIA Y EL ARTE DE LA ORTODONCIA EMPLEADOS PARA RECONOCER Y ELIMINAR  
POSIBLES IRREGULARIDADES Y MALPOSICIONES EN EL COMPLEJO DENTOFACIAL EN  
DESARROLLO.



ASOCIACION AMERICANA DE ORTODONCISTAS

# ORTODONCIA INTERCEPTIVA

La ortodoncia interceptiva está destinada a optimizar el crecimiento y el desarrollo dentofacial.

Este concepto de tratamiento intenta prevenir o minimizar las anomalías del desarrollo dental al tiempo que permite la modificación del crecimiento craneofacial.



**ORTODONCIA  
INTERCEPTIVA**

**SINÓNIMOS**

TRATAMIENTO TEMPRANO

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PRIMERA FASE



a custom smile created  
just for you  
by an AAO orthodontist

FIND AN ORTHODONTIST



American  
Association of  
Orthodontists

TM

Recomienda una consulta de ortodoncia inicial para un niño antes de los 7 años de edad, para determinar la necesidad o no del tratamiento temprano.

La mayoría de las afecciones de ortodoncia se pueden tratar más fácil y rápidamente durante este período de crecimiento activo.



# ORTODONCIA INTERCEPTIVA

## TRATAMIENTO DE MALOCLUSIONES TEMPRANAS

NIÑOS - ADOLESCENTES  
DENTICION MIXTA CRECIMIENTO  
ACTIVO

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# CONSIDERACIONES IMPORTANTES

DIAGNÓSTICO DEL TIPO DE  
MALOCLUSIÓN DENTAL Y/O  
ESQUELÉTICA

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ETAPA DE CRECIMIENTO Y  
DESARROLLO ÓSEO

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# RADIOGRAFÍA PANORÁMICA

MADURACIÓN O EDAD DENTAL

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GUIA DE ERUPCIÓN

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ANOMALÍAS DENTARIAS



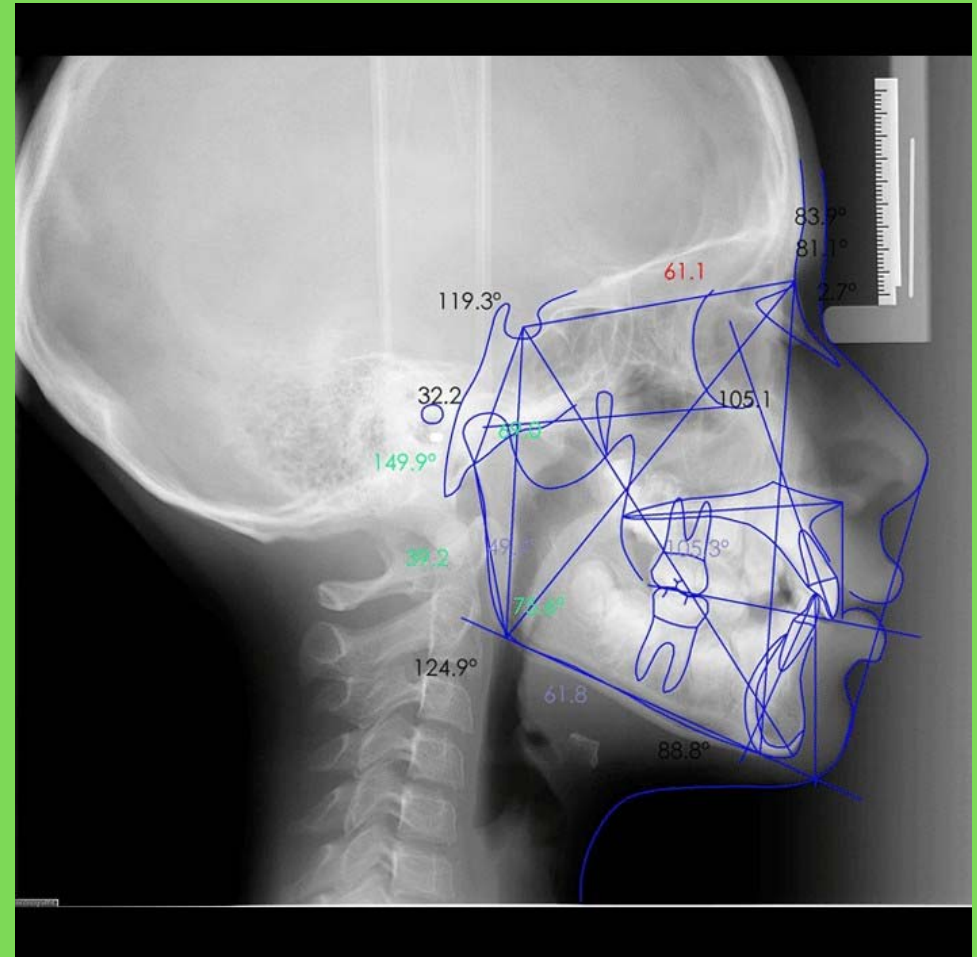
# RADIOGRAFÍA LATERAL DE CRÁNEO

## MADURACIÓN CERVICAL

Estimación del desarrollo óseo a partir de las  
vertebras cervicales.

## CEFALOMETRÍA DE JARABAK

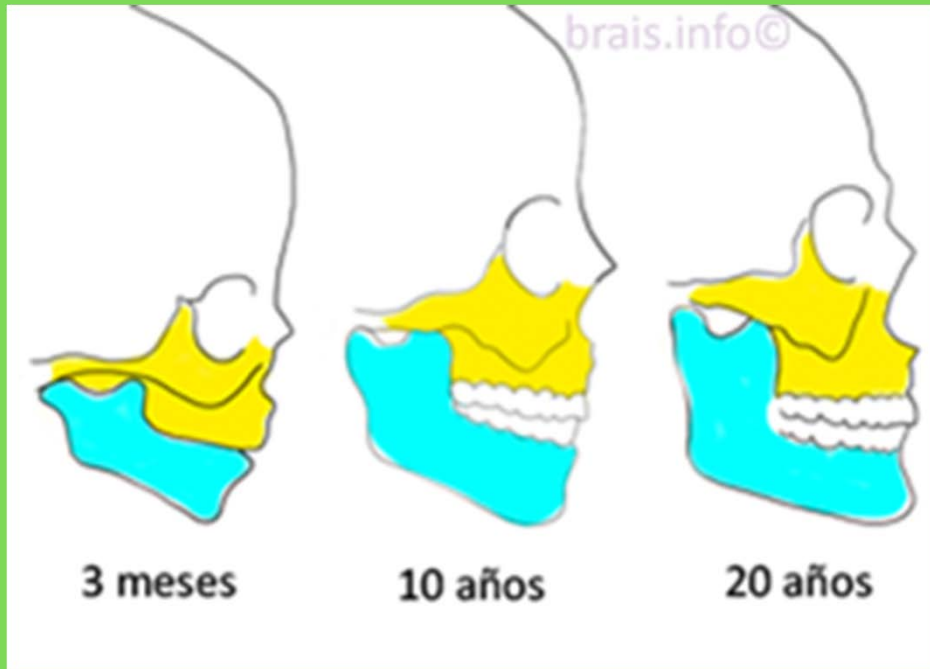
Análisis de líneas y ángulos craneo-faciales para  
predecir la dirección de crecimiento mandibular y maxilar.



# RADIOGRAFÍA CARPAL



# MOMENTO IDEAL



## PICO DE CRECIMIENTO

ANTESO DURANTE FASE DE  
CRECIMIENTO MÁXIMO

# INDICACIONES PARA EL TRATAMIENTO TEMPRANO

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1

PROBLEMAS  
DENTALES

2

PROBLEMAS  
ESQUELETALES

3

HÁBITOS  
FUNCIONALES

# ORTODONCIA INTERCEPTIVA

INCLUYE EL TRATAMIENTO DE:



**ESPACIO EXCESIVO**



**APIÑAMIENTO  
SEVERO**



**MORDIDA ABIERTA**



**PATRONES  
ANORMALES DE  
ERUPCIÓN**



**MORDIDA  
PROFUNDA**



**MORDIDA CRUZADA**



**SOBRESALTE  
SEVERO**



# APARATOS

## FIJOS

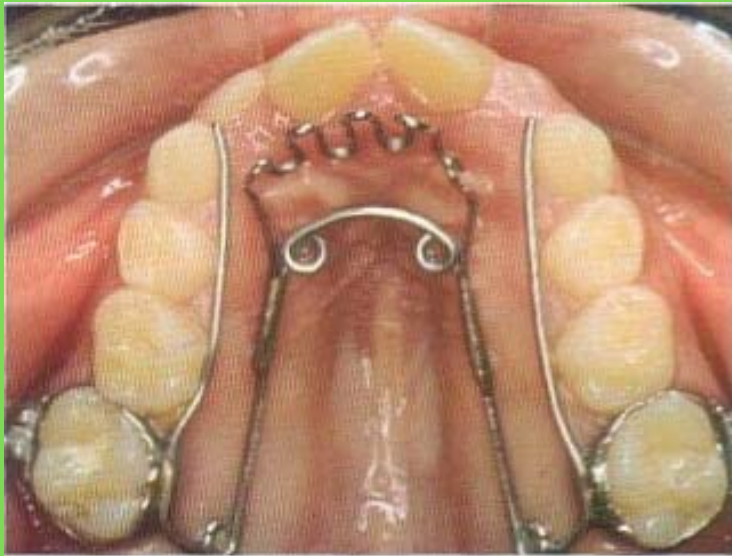
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## REMOVIBLES

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SON DISPOSITIVOS UTILIZADOS PARA MOVER LOS DIENTES, CAMBIAR LA POSICIÓN DE LA MANDÍBULA O MANTENER LOS DIENTES EN SU LUGAR PARA LOGRAR LOS CAMBIOS DESEABLES

## INHIBIDOR DE HABITO



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SON APARATOS UTILIZADOS PARA INTERFERIR HÁBITOS NO FISIOLÓGICOS.

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### REJILLA PALATINA

SIRVE COMO  
OBSTÁCULO PARA  
SUCCIÓN DIGITAL.



### REJILLA LINGUAL

REJILLA SOLDADA A  
UN ARCO LINGUAL  
QUE IMPIDE EL  
HÁBITO DE LENGUA; AL  
PROTRUIR  
ÉSTA EL FRENTE  
ANTERIOR EVITANDO L  
AS MORDIDAS  
ABIERTAS  
ANTERIORES.



### LIP BUMPER

SEPARA LOS LABIOS DE  
LA CARA VESTIBULAR DE  
LOS INCISIVOS  
PERMITIENDO EL  
DESARROLLO NORMAL  
ÓSEO Y DENTAL.

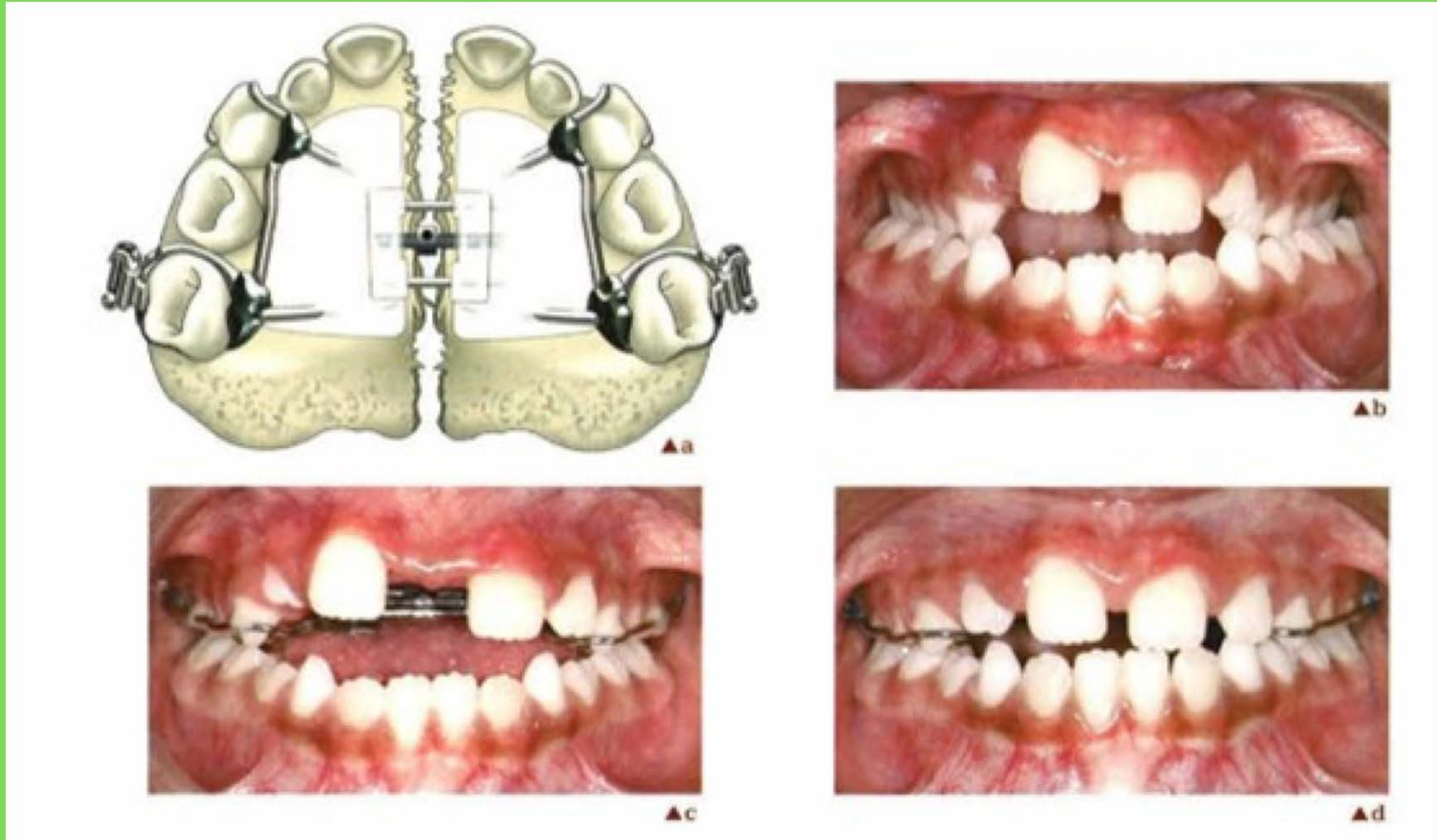
**ANTES**



**DESPUÉS**



# Disyuntores



# APARATOS FUNCIONALES

## TRATAMIENTO MALOCCLUSIÓN CL II

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Producen cambios en la postura de la mandíbula, manteniéndola abierta, o abierta y hacia adelante.

El estiramiento de los músculos y tejidos blandos crea presiones transmitidas a las estructuras dentales y esqueléticas, moviendo los dientes y modificando el crecimiento.

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Imagen1.

# BIONATOR

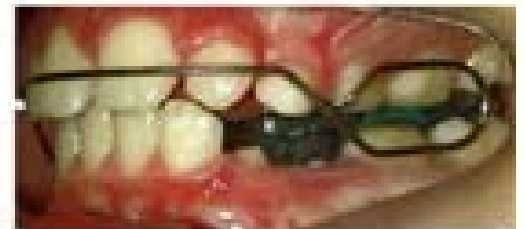
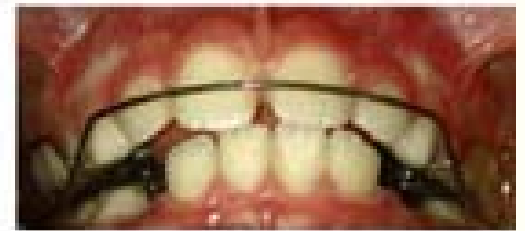
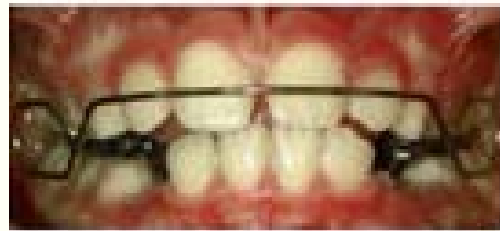
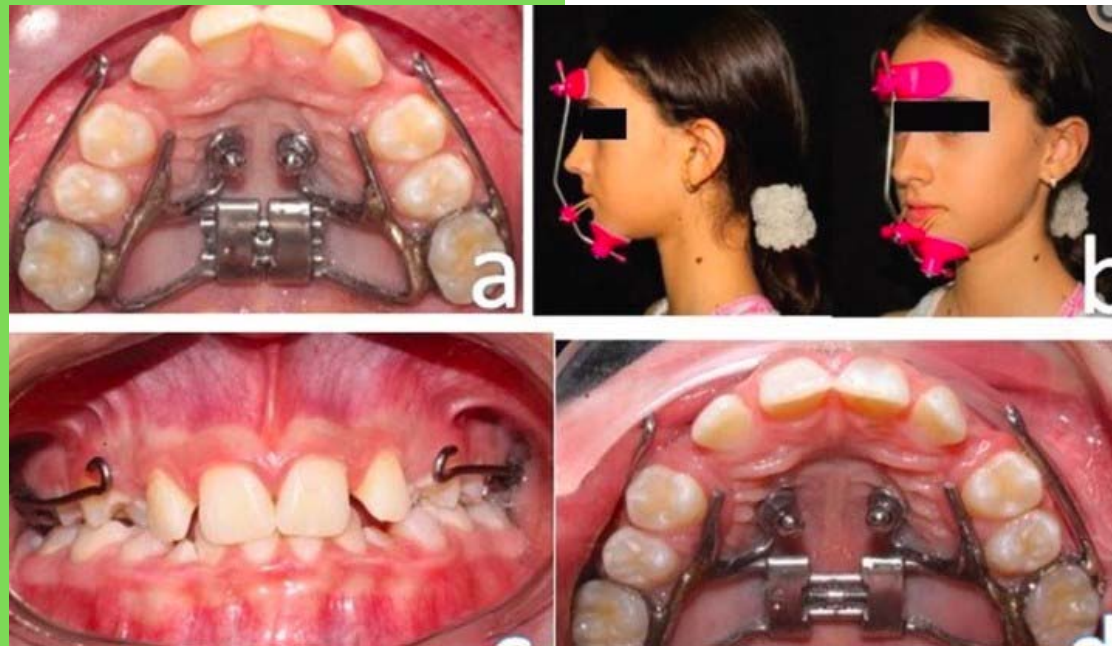


Imagen2.

# EXPANSOR MAXILAR



# MÁSCARA FACIAL





EFICACIA



EFICIENCIA



**EFFECTIVIDAD**

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¿QUÉ TAN BIEN FUNCIONA?

**EFICIENCIA**

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¿CUÁL ES EL DE COSTO-BENEFICIO?  
¿CUÁNTO TIEMPO DURA EL  
TRATAMIENTO?

## Early orthodontic treatment for Class III malocclusion: A systematic review and meta-analysis

See Choong Woon and Badri Thiruvkatachari  
Manchester, United Kingdom

**Introduction:** Class III malocclusion affects between 5% and 15% of our population. The 2 most common dilemmas surrounding Class III treatment are the timing of treatment and the type of appliance. A number of appliances have been used to correct a Class III skeletal discrepancy, but there is little evidence available on their effectiveness in the long term. Similarly, early treatment of Class III malocclusion has been practiced with increasing interest. However, there has been no solid evidence on the benefits in the long term. The aim of this systematic review was to evaluate the effectiveness of orthodontic/orthopedic methods used in the early treatment of Class III malocclusion in the short and long terms. **Methods:** Several sources were used to identify all relevant studies independently of language. The Cochrane Central Register of Controlled Trials, Cochrane Database of Systematic Reviews, Embase (Ovid), and MEDLINE (Ovid) were searched to June 2016. The selection criteria included randomized controlled trials (RCTs) and prospective controlled clinical trials (CCTs) of children between the ages of 7 and 12 years on early treatment with any type of orthodontic/orthopedic appliance compared with another appliance to correct Class III malocclusion or with an untreated control group. The primary outcome measure was correction of reverse overjet, and the secondary outcomes included skeletal changes, soft tissue changes, quality of life, patient compliance, adverse effect, Peer Assessment Rating score, and treatment time. The search results were screened for inclusion, and the data extracted by 2 independent authors. The data were analyzed using software (version 5.1, Review Manager; The Nordic Cochrane Centre, The Cochrane Collaboration; Copenhagen, Denmark). The mean differences with 95% confidence intervals were expressed for the continuous data. Random effects were carried out with high levels of clinical or statistical heterogeneity and fixed effects when the heterogeneity was low. **Results:** Fifteen studies, 9 RCTs and 6 CCTs, were included in this review. In the RCT group, only 3 of 9 studies were assessed at low risk of bias, and the others were at high or unclear risk of bias. All 6 CCT studies were classified as high risk of bias. Three RCTs involving 141 participants looked at the comparison between protraction facemask and untreated control. The results for reverse overjet (mean difference, 2.5 mm; 95% CI, 1.21-3.79;  $P = 0.0001$ ) and ANB angle (mean difference, 3.90°; 95% CI, 3.54-4.25;  $P < 0.0001$ ) were statistically significant favoring the facemask group. All CCTs demonstrated a statistically significant benefit in favor of the use of each appliance. However, the studies had high risk of bias. **Conclusions:** There is a moderate amount of evidence to show that early treatment with a facemask results in positive improvement for both skeletal and dental effects in the short term. However, there was lack of evidence on long-term benefits. There is some evidence with regard to the chincup, tandem traction bow appliance, and removable mandibular retractor, but the studies had a high risk of bias. Further

Revisión de 15 estudios que evaluaban niños de 7 a 12 años de edad con maloclusión de clase III.

El tratamiento temprano de la máscara facial produce cambios esqueléticos y dentales a corto plazo.

Mentonera y tracción en tándem mostraron cambios esqueléticos severos.

## Mandibular changes produced by functional appliances in Class II malocclusion: A systematic review

Paola Cozza,<sup>1</sup> Tiziano Baccetti,<sup>2</sup> Lorenzo Franchi,<sup>3</sup> Laura De Toffol,<sup>4</sup> and James A. McNamara, Jr<sup>5</sup>  
*Rome and Florence, Italy, and Ann Arbor, Mich*

The aim of this systematic review of the literature was to assess the scientific evidence on the efficiency of functional appliances in enhancing mandibular growth in Class II subjects. A literature survey was performed by applying the Medline database (Entrez PubMed). The survey covered the period from January 1968 to January 2009 and used the medical subject headings (MeSH). The following study types that reported data on treatment effects were included: randomized clinical trials (RCTs), and prospective and retrospective longitudinal controlled clinical trials (CCTs) with untreated Class II controls. The search strategy resulted in 704 articles. After selection according to the inclusion/exclusion criteria, 22 articles qualified for the final analysis. Four RCTs and 18 CCTs were retrieved. The quality standards of these investigations ranged from low (3 studies) to medium/high (8 studies). Two-thirds of the samples in the 22 studies reported a clinically significant supplementary elongation in total mandibular length (a change greater than 2.0 mm in the treated group compared with the untreated group) as a result of overall active treatment with functional appliances. The amount of supplementary mandibular growth appears to be significantly larger if the functional treatment is performed at the pubertal peak in skeletal maturation. None of the 4 RCTs reported a clinically significant change in mandibular length induced by functional appliances; 3 of the 4 RCTs treated subjects at a prepubertal stage of skeletal maturity. The Herbst appliance showed the highest coefficient of efficiency (0.28 mm per month) followed by the Twin-block (0.23 mm per month). (Am J Orthod Dentofacial Orthop 2006;129:599.e1-599.e12)

**C**lass II malocclusion is one of the most common orthodontic problems, and it occurs in about one third of the population.<sup>1,2</sup> The most consistent diagnostic finding in Class II malocclusion is mandibular skeletal regression. A therapy able to enhance mandibular growth is indicated in these patients.<sup>3,4</sup> A wide range of functional appliances aimed

to stimulate mandibular growth by forward posturing of the mandible is available to correct this type of skeletal and occlusal disharmony.<sup>5</sup> Although many studies in animals have demonstrated that skeletal mandibular changes can be produced by posturing the mandible forward,<sup>6,7</sup> the effects on humans are more equivocal and controversial. Many treatment protocols, sample sizes, and research approaches have led to disparate outcomes in studies on human subjects.

A previous systematic review on the efficacy of functional appliances on mandibular growth by Chen et al<sup>8</sup> analyzed the relevant literature from 1966 to 1999 in a Medline search strategy limited to randomized clinical trials (RCTs). The results were inconclusive. The main difficulty when analyzing RCTs was related to inconsistencies in measuring treatment-outcome variables. In addition, treatment durations varied among studies, and treatment groups were compared with either untreated control groups or subjects undergoing other forms of treatment.

RCTs have been recommended as the standard for comparing alternative treatment approaches. To date, very few RCTs on treatment outcomes of functional jaw orthopedics have been published in the orthodontic literature. The difficulty in gathering many patients

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<sup>5</sup>Thomas M. and Doris Fisher Endowed Professor of Dentistry, Department of Orthodontics and Pediatric Dentistry, School of Dentistry, professor of Cell and Developmental Biology, School of Medicine, research professor, Center for Human Growth and Development, University of Michigan, Ann Arbor, present practices, Ann Arbor, Mich.

Reprint requests to: Lorenzo Franchi, University degli Studi di Firenze, Via dei Pinti 9, Milan, 00148, 50127, Firenze, Italy. e-mail: lfranchi@firenze.unifi.it. Submitted, June 2005; revised and accepted, November 2005.

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- La cantidad de crecimiento mandibular a corto plazo parece ser significativamente mayor cuando el tratamiento funcional se realiza en la etapa de crecimiento adolescente.
- La inclusión del crecimiento acelerado de la pubertad en el período de tratamiento puede ser considerado como un factor clave en el logro clínico del crecimiento mandibular significativo con ortopedia funcional de la mandíbula.

## Orthodontics in Children and Impact of Malocclusion on Adolescents' Quality of Life



Lucas Guimarães Abreu, PhD, MSc, DDS\*

### KEYWORDS

- Adolescent • Malocclusion • Orthodontics • Quality of life • Pediatrician
- Family physician • Primary care

### KEY POINTS

- Malocclusion exerts an adverse effect on oral health and has a negative impact on adolescents' quality of life.
- The timely referral of children/adolescents to orthodontic treatment is a concern that the pediatric provider should have.
- Pediatricians and physicians in primary care have an important role on the anticipatory guidance of children/adolescents and their parents/caregivers regarding children/adolescents' oral health, particularly for orthodontic outcomes.

Las discrepancias severas pueden ser percibidas como poco atractivas por los adolescentes, lo que puede conducir a episodios de vergüenza y angustia.

La maloclusión severa presenta un mayor impacto negativo en la calidad de vida de los adolescentes que una leve maloclusión o ninguna en absoluto.

Las principales repercusiones de la maloclusión están en el bienestar emocional y social del individuo.

Impacto perjudicial en las funciones orales (comer y hablar) también se ha observado.



## CONCLUSIONES

INTERCEPTA EL PROBLEMA EN DESARROLLO, GUÍA EL CRECIMIENTO DE LOS HUESOS FACIALES Y DE LA MANDÍBULA Y PROPORCIONA UN ESPACIO ADECUADO PARA LOS DIENTES PERMANENTES EN VÍA DE ERUPCIÓN.

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LOS PROBLEMAS DE ORTODONCIA CORRECTIVA PUEDEN SER MÁS FÁCILES DE CORREGIR EN EDADES TEMPRANAS.

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EL MEJOR MOMENTO DE INTERVENCIÓN ES DURANTE CRECIMIENTO ACTIVO.

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DEBE SER UN TRATAMIENTO REALIZADO POR ESPECIALISTAS.

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Gracias

