Functional Mandibular Advancer (FMA)

for the correction of Class II malocclusions, non-dependent on patient compliance

New!

Functional Mandibular Advancer

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GERMAN PRECISION IN ORTHODONTICS

Functional Mandibular Advancer (FMA)*

for the correction of Class II malocclusions, non-dependent on patient compliance

The Functional Mandibular Advancer (FMA) is a new-type fixed appliance, developed for the correction of Class II discrepancies, which is non-dependent on patient compliance. The essential elements of this Herbst-alternative comprise protrusive bars and inclined planes fixed to cast splints or prefabricated bands on the vestibular surfaces of the posterior teeth in the gingivobuccal fold.

Pre-assembled parts for laboratory fabrication of the FMA appliance

Indication and problem definition

After exceeding the growth maximum, frequently occurring Class II malocclusions characterised by mandibular retrusion can only be treated with fixed appliances. Also with children and adolescents more and more fixed appliances are now used to realise the treatment independently from the compliance of the patient.

Elastic, bimaxillary fixed appliances are disadvantageous as they only achieve predominantly dentoalveolar correction while rigid appliances have been proven to correct the skeletal bite more extensively. This mainly relies on stimulation of the adaptive osseous remodelling processes in the temporomandibular joint, which has already been explained in numerous studies.

The rigid Functional Mandibular Advancer (FMA) is a new therapeutic alternative to existing appliances.

Description and advantages of the Functional Mandibular Advancer (FMA)

The FMA is a rigid, fixed, protrusive appliance which incorporates the basic concept of functional orthodontics due to the mechanical principle of the inclined planes. Its essential elements are protrusive bars and inclined planes, which are fixed bilaterally to the vestibular surfaces of the posterior teeth in the gingivobuccal fold and therefore affect neither swallowing nor speech. The protrusive bars of the FMA are placed at an angle of approx. 60 degrees to the horizontal plane thereby actively guiding the mandible anteriorly during jaw closure. The FMA enhances active patient involvement, thereby also enhancing anterior posturing of the mandible and myofunctional training of the muscles. This promotes fast and comfortable adjustment to the desired mandibular position.

In cases of partial jaw closure, the appliance also provides guidance. Unlike the Herbst appliance, with its telescopic mechanism, adjustment in the therapeutic position as well as all functional movements are almost frictionless.

FMA welded to bands

In comparison to traditional removable functional orthodontic appliances the FMA is fixed, therefore its efficiency is completely independent from patient compliance.

Reactivation along the sagittal plane can be carried out by relocating the protrusive bars into threaded inserts positioned further toward the anterior. Thus, step-by-step adjustment allows for gradual habitation, in particular with adult patients.

Egg timer-shaped mounting plates with threaded inserts and protrusive bar with receptacles for three different positions

The FMA appliance has been proven clinically for many years, which is documented in numerous studies.

An extensive literature list is available on the website of the University Hospital of Aachen, Germany (http://www.ukaachen.de). Search term: "Kinzinger".

**acc. to PD Dr. G Kinzinger and Dr. J. Ostheimer in cooperation with Dr. B. Ludwig*

Easy assembly of the appliance

As the individual components are standardised, manufacturing and laboratory fabrication of the appliance are not only straightforward, but can also be customised according to the diagnosis. This provides for fixation to cobalt chrome splints or crowns as well as prefabricated bands. The length of the protrusive bars can be adjusted in the laboratory depending on the specific case (dimensions of the gingivobuccal fold, opening angle of the mouth). Detailed laboratory instructions are enclosed.

FMA on bands in the maxilla

FMA on bands in the mandible

Sections of the FMA can be fitted to the vestibular aspects of thermoformed splints to act as retentive units or anti-snoring devices.

FMA fixed to thermoformed splints

Cases

The following cases show the clinical application of the new FMA for correcting Class II malocclusions.

Images: PD. Dr. G. Kinzinger, Orthodontic Department, University Hospital Aachen, Germany.

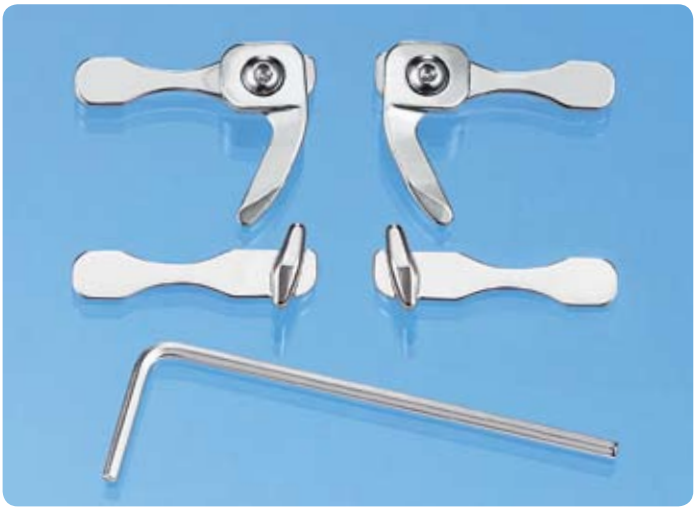
As it is positioned buccally, the FMA appliance complements lingual treatment perfectly.

Dr. B. Ludwig and Dr. B. Glasl, private practice, Traben-Trarbach, Germany.

Advantages of the FMA at a glance

- Non-dependent on patient compliance, thus faster correction of the intermaxillary jaw relationship during growth
- Patient-friendly through gradual habitation by using the functional principle of the inclined planes
- Skeletal correction yet only minor dentoalveolar side-effects
- Corrects the intermaxillary jaw relationship and adjusts the anterior dental arch simultaneously, thus curtailing the total treatment time significantly
- Skeletal bite correction even after reaching maximum growth (adult treatment)
- Correction of mandibular swinging
- Disc repositioning/TMJ-therapy
- Only minor tilting of the mandibular incisors as the appliance is located in the posterior area of the dental arch (= force application more distal than with other Class II appliances)
- Intra-oral reactivation through repositioning of the protrusive bars
- Preparation of the appliance in the laboratory: custom shortening of the protrusive bars
- Fixed on cast splints or prefabricated bands
- Rigid dimensions due to lack of moving parts
- FMA treatment can be combined with lingual treatment or splint therapy

Order description



Description	Quantity	Order-Nr.
Functional Mandibular Advancer (FMA) CE 0297	1 Set consisting of: - Mounting plates with threaded inserts, left and right - Protrusive bars, left and right - Mounting plates with inclined plane, left and right - Hexagon key - 2 screws - Laboratory instructions	330-0100

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