fas

FACE Aligner System

WORKBOOK

(English)

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INTRODUCTION

What is FAS?

FACE Aligner System (FAS) is a FACE project to adapt FACE treatment goals to the world of aligners. Our mentor Dr. Ron Roth always told us that braces (aligners) were simply the vehicle and that the most important thing to achieve OUR goals was by implementing a goal oriented diagnosis and treatment plan.

Why FAS?

After studying the strengths and limitations of each aligner system on the market, we have concluded that a new aligner system needed to be developed in order to achieve our FACE treatment goals. FAS arises after realizing that with the aligner systems that were on the market, it was impossible for us to achieve our treatment goals.

a - FAS takes into account all the treatment possibilities of each particular case. It also takes into account all possible limitations in correcting tooth malposition, thus avoiding poor planning and being more efficient in planning.
b - FAS diagnoses and plans on the real hinge axis of the patient.
c - FAS takes into account periodontal limitations. A traditionally important goal in the FACE treatment philosophy is periodontal health. The key feature to achieve this goal is placing the roots in the alveolar bone at the end of treatment

Advantages of FAS

The great advantage of FAS is to treat the patient taking into account the way they chew and placing the teeth in harmony with their joints. In this fashion we obtain the aesthetic, functional and stability goals. Achieving these treatment goals gives us longevity and long-term treatment results.

Another great advantage of FAS is the use of innovative materials adapted to each stage of treatment that optimizes “tracking” and reduces treatment time. From diagnosis and planning to manufacturing with the FORESTADENT seal of quality.

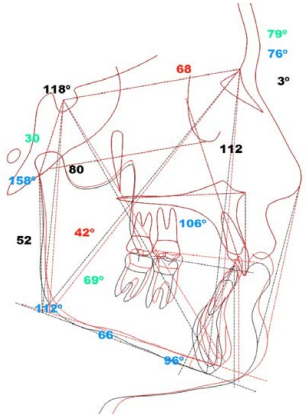
> ” For once you have tasted flight you will walk the earth with your eyes turned skywards, for there you have been and there you will long to return. “
>
> *Leonardo da Vinci*

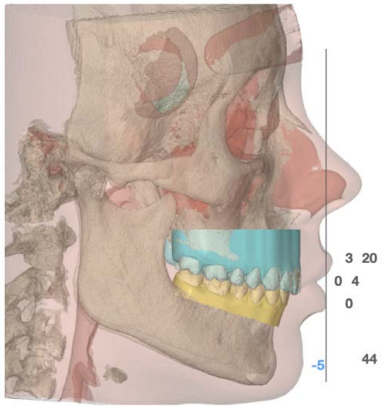
THE IMPORTANCE OF DIAGNOSIS

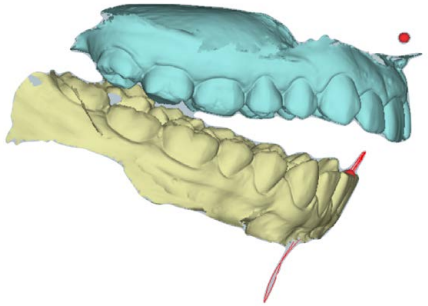
Even more important in Aligner / Invisible Orthodontics

The key to a good result is based on an accurate diagnosis. The management of the vertical dimension is one of the aspects of the diagnostic process that distinguishes FACE and is of utmost importance to obtain an aesthetic and functional result. FAS takes into account the vertical dimension.

Another important element for an accurate diagnosis is to take into account the roots of all the teeth in the three planes of space. Again, FACE differentiates itself by locating the roots in the alveolar bone in each treatment plan. This is a decisive element to obtain the objective of periodontal health, knowing the limitations of tooth movements, the efficiency of orthodontic correction and a decisive factor for the stability of the final result. FAS takes all the details into account!







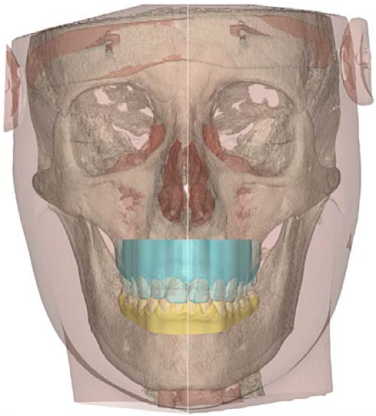
DIAGNOSTIC ELEMENTS

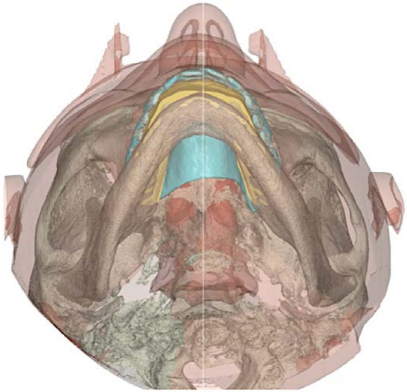
Planning in 2D, 3D and 4D

Precision in diagnosis has been and is a hallmark of the FACE philosophy and is the basis on which FAS quality is based.

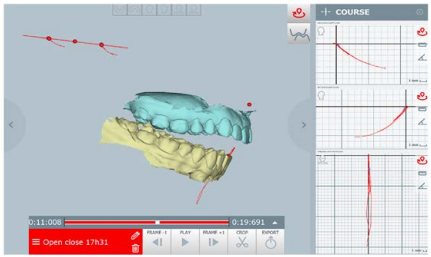
The 2D diagnostic process using a conventional lateral radiograph and a panoramic radiograph provides very valuable information for the treatment plan in the vertical and sagittal dimensions with the help of the cephalometric tracing. With this tracing we will make a VTO (visual treatment objective) in which we will specify the desired vertical and sagittal correction of the incisors as well as the needs to increase or decrease the vertical dimension and consequently the anchorage requirements.

The 3D recordings through 3D radiographs and digital models from an intraoral scanner, or digitized from traditional plaster models, allows a precision set-up and an optimized treatment result for each individual patient. Dedicated software offers relevant information for the predictability of the final result and the optimization of the treatment plan.

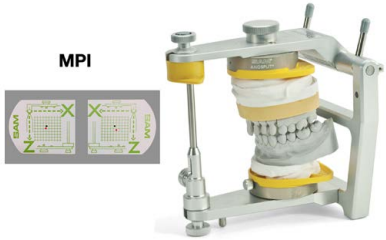




FAS is prepared to receive ModJaw 4D dynamic recordings. The total digitization of the diagnostic process through 4D records is already a reality in many offices and provides new information that is relevant for the diagnostic process, but above all it allows planning orthodontic treatment taking into account mandibular dynamics.



If you work with classic models mounted on an articulator, FAS is also for you. We offer a model collection service to digitize them and offer you maximum precision in the process.



FAS WIZARD

Instructions

FAS WIZARD is a planning tool where instructions are sent for the management of the treatment set-up for each case with maximum precision.

The FAS WIZARD consists of 7 steps in which we analyse and plan taking into account the clinical information sent.

1 Vertical Dimension

2 Transverse (Midlines)

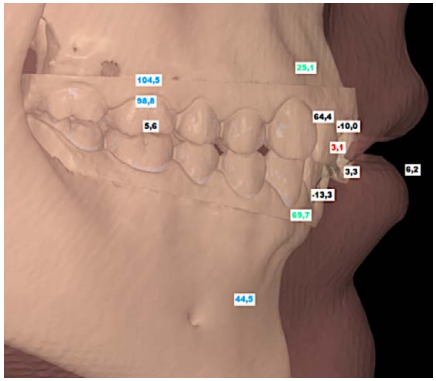
3 Sagittal

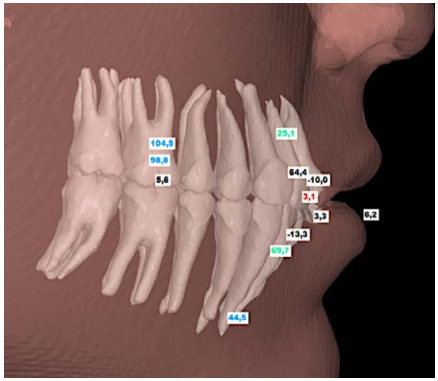
4 Bolton discrepancy

5 Limitations

6 Planned anchorage

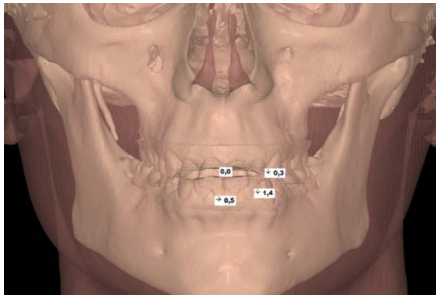
7 STOP and GO

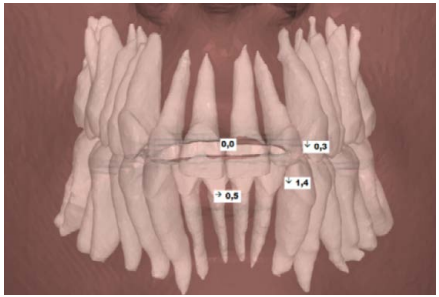




1 - Vertical Dimension

FAS plans autorotation on the real hinge axis in the vertical plane to modify the total vertical dimension. This differential feature when compared with other aligner systems is a hallmark of the FACE philosophy. In step 1 you must specify if you want to decrease, maintain or increase the vertical dimension. The changes of the occlusal plane (Spee / Wilson curve) of each jaw are also specified in this step, taking into account in the correction, the exposure of incisors, canines, premolars and molars and the canting corrections of the occlusal plane, if any.





2 - Transverse (Midlines)

Modification of the planned transverse plane modifications from midline and arch width to posterior tooth torque.

3 - Sagittal

If at the end of steps 1 and 2 a sagittal problem persists, you must indicate in this step how you want to perform the sagittal correction (class II or class III). Do you want to correct it through molar rotation? By mesialization? Distalizing? And what teeth? At this stage you must also define the desired overbite and overjet at the end of the set-up.

4 - Bolton discrepancy

In case after the corrections in steps 1, 2 and 3 there is a dental osseous discrepancy (DOD), in this step you must indicate how you prefer to solve it either by means of interproximal reduction (IPR) or extraction of teeth in which case you must indicate which.

5 - Limitations

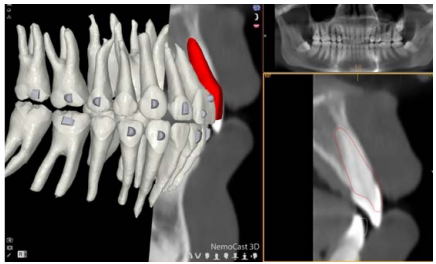
Limitations assumed in planning. In many cases there are limitations due to dental or skeletal limitations (agenesis, anatomical alterations of the teeth) that for one reason or another will not be corrected. In this step you must specify the limitations that may be posed to the treatment plan.

6 - Planned anchorage

Planned anchorage in case of planning skeletal anchorage. In this step we specify what type of additional anchor (microscrews, plates) and the expected position to be taken into account in the set-up of the case.

7 - STOP and GO

FAS STOP and GO. The ideal in a treatment with aligners is to be able to verify the follow-up of the treatment and for this we can define “a priori” the critical check-up stages to check if the planned treatment plan is being achieved with the desired precision. FAS helps you not to omit any relevant data during the diagnostic process. FAS provides you with a FAS Medical Record because there is vital information that should not be underestimated.

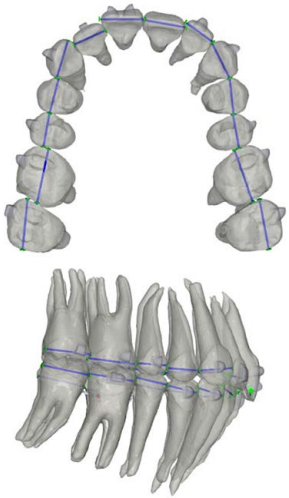


FAS OCCLUSALDESIGN

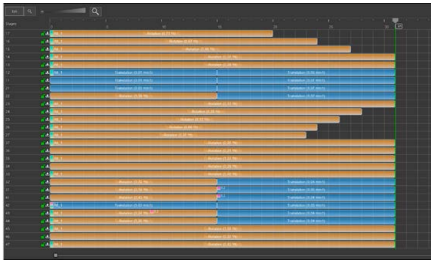
The OcclusalDesign is a tool through which you can check the proposed set-up and actively participate in the correction of what has been delivered.

FAS allows you to work by visualizing the roots, crowns and the real gingiva of your patient. This is one of the most significant technological differences and comparative advantages over other aligner orthodontic systems. The segmentation of the “real roots” allows you to plan taking into account the alveolar bone that surrounds the roots.

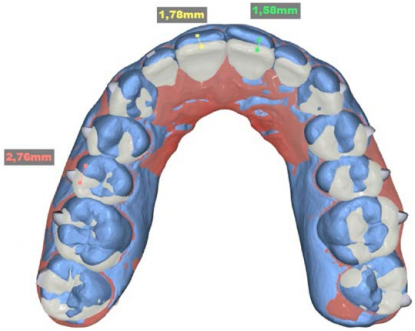
If the treatment plan exceeds the “ideal position of the roots” you will know it in advance to be able to plan the dental movements that will leave the teeth in the bone and thus not affect the stability of the case.

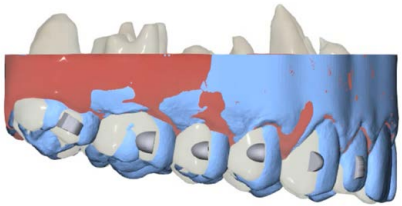


An Advanced Bolton Discrepancy Analysis. It is common to observe tooth size discrepancies that occur in one or more teeth in both the upper and lower arches. To finish the case with optimal dental aesthetics and stable occlusal relationships it is crucial information that must be taken into account in the planning process. The dedicated software FAS provides a tool that allows to visualize discrepancies of size of the entire dentition or tooth by tooth.



OcclusalDesign offers you a visualization tool for the stages corresponding to each segment, in which the planned translation and rotation are specified on a timeline. In the case of having to place attachments or interproximal reduction, it is also displayed on this time scale when it is planned.





OcclusalDesign It allows you to see an overlay before and after to evaluate the planned treatment plan and it is always possible to make measurements with the 2D and 3D measurement tool.

OcclusalDesign It allows to see on the models a simulation of the movements of each stage in succession in a time line.

TREATMENT MECHANICS

Timing and sequence of movements

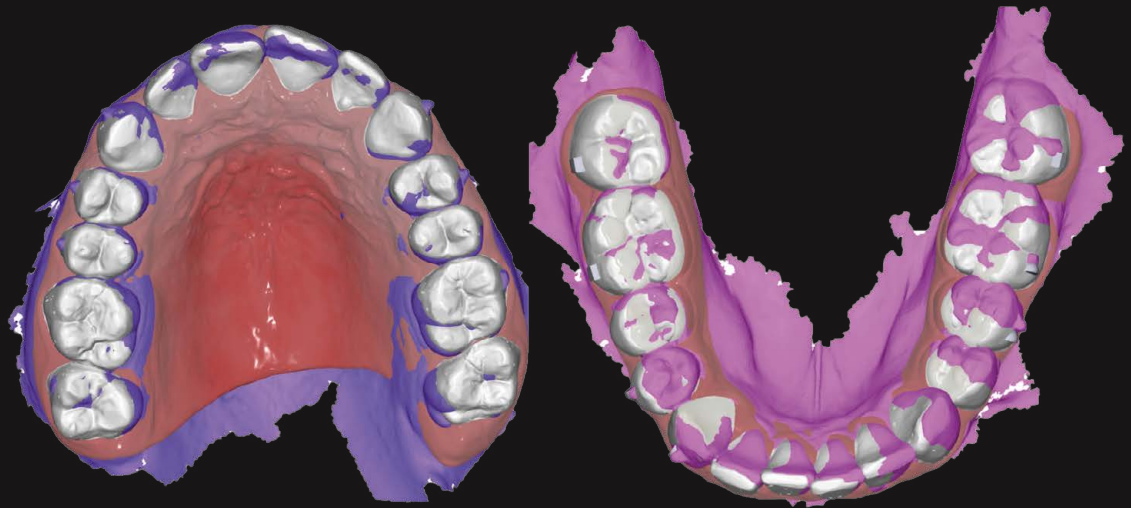
The biomechanics of FAS treatment has common aspects with straight wire orthodontics but has its own characteristics that imply differences in the planning of the treatment plan. One of the differential aspects of FAS is the division of the treatment into two phases according to the needs of transverse correction.

First Phase is the initial phase of treatment in cases of corticotomy assisted expansion. We use a special material (3rd generation aligner plastic) for the best tracking and use of this stage in a period of time limited by the effect of the surgery. The attachments in First Phase are specific for the control of the torque of the posterior teeth during the process of expansion of the arch.

Second phase is the completion phase if the assisted arch expansion has been resolved and it is the phase of more detailed dental position control. A second phase treatment can be started and ended if the treatment plan so specifies. The material used to optimize the tracking in this stage has optimized elasticity properties and the attachments used can be optimized for this treatment phase.

STOP AND GO

The effectiveness of aligner treatment depends to a great extent on the correct monitoring (tracking) of the treatment plan applied to each aligner. To maximize effectiveness, STOP and GO foresees stages of verification of the evolution of the treatment and provides overlapping tools to facilitate the procedure to the maximum. If the treatment is efficient in the verification stage, you just have to click on finish and the second stage of corrections will arrive automatically, and if modifications have to be implemented, you will be in time to evaluate different therapeutic options to achieve the planned result in the shortest possible time.



BIOMECHANICS AND ALIGNERS

a) The splint design (the splint design with greater height and digital thickening of the gingiva is discussed here for greater control and greater efficiency).
FAS technology is developed to overcome the limitations of other aligner systems. One of the limitations in the effectiveness of the force applied to the teeth resides in the permanent deformation of the margins of the aligners. To solve this problem, the FAS system, in addition to the changes in the position of the teeth, takes into account the changes that will occur at the gingival level and the relationship of the aligner with the attached gingiva. The aligners are adapted to the cervical margin and reproduce the gingival contour. This characteristic provides resistance to the aligner in this critical area, which translates into a more efficient correction in treatment time and precision of the result.

b) Plastics: use of different plastics depending on the objective, when and why?

The main objective of FAS is to offer the clinician and patient a treatment with FACE excellence, maximum predictability and in the shortest possible treatment time. FAS orthodontic biomechanics takes into account the difficulties of the stage and type of correction and therefore has different materials for the aligners with characteristics that optimize the results to obtain predictable results in the shortest possible treatment time.

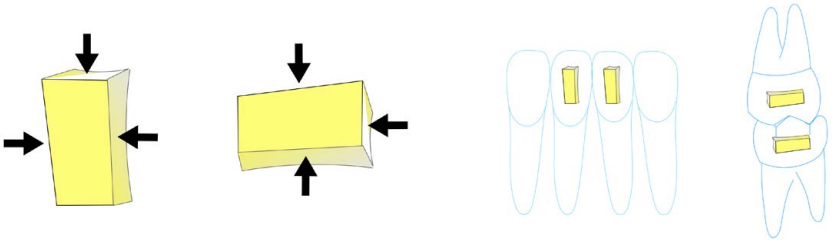
One of the strengths in aligner mechanics is their ability to control the width and shape of the dental arch. The correction necessary to meet the functional and aesthetic goals of FACE treatment in many cases is limited by the characteristics of the alveolar process and its relationship with the dental roots. FAS proposes to solve this limitation by corticotomy surgery.

The cases with corticotomies are to modify the width of the arch and need a significant correction in a limited time since in 3-4 months the corticotomies are completely healed. For the effectiveness of the procedure and to take advantage of the RAP (regional acceleratory phenomenon) we have to make the most of 3-4 months and for that we use a harder plastic.

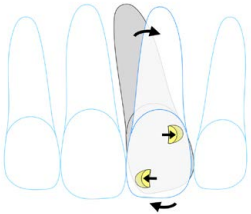
FAS First Stage are aligners with optimized mechanical properties for the expansion of the arch with corticotomies. It is a stiffer material that achieves optimal tracking with minimal attaches and with a smaller number of steps.

FAS Second Stage is a more elastic material with optimized properties for dental corrections in which the roots are corrected within the alveolar process. Thanks to the mechanical properties of this material, the adjustment of the aligners has maximum precision both on the tooth surface and on all types of attachments.

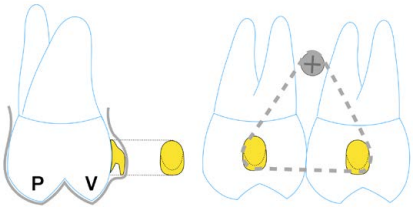
c) The Attachments: Generic and FAS attachments - FAS is allowed to use attachments from other aligner systems. There are certain orthodontic corrections that depend on the attachments placed on the tooth surface.
FAS has a wide digital library of exclusive attachments optimized for corrections according to the FACE philosophy of treatment, and it also uses generic attachments common to other aligner systems.



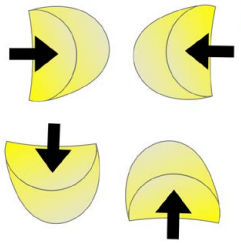
FAS Rectangular Attachment its vertical position provides effective crown inclination control on single rooted teeth and horizontally provides retention on molars for anchorage and torque control.



Attache FAS Hemi-Spheric X2 effective control of crown inclination on upper incisors.



FAS Intrusion attachment effective for skeletal anchorage



FAS Hemi-Spheric attachments for maximum grip on the buccal and lingual surfaces

PRODUCT RANGE

FORESTADENT has two systems of aligners: Accusmile® and FAS.

Accusmile®: This is a complete system for simple and intermediate cases. Based on careful planning carried out by orthodontists and on the precedence of movements, it allows you to solve simple cases without having to worry about anything.

FAS is FORESTADENT's aligner system for complex cases. Based on a precise diagnosis and using specific digital tools, it allows strict control during the course of treatment through control stops (STOP and GO).

accu smile by FORESTADENT

There are three different formats depending on the objective to be pursued:

Accu Fire (8 aligners)
Refinement, relapses or small movements and termination of cases

Accu 20 (20 aligners)
Very slight crowding and relapses

Accu 40 (40 aligners)
Orthocosmetics,movement ofprevious sectors without occlusal correction and crowding moderate

fas FACE Aligner System

Within the system there are two options:

FAS Compact
It distinguishes an initial work phase, an adjustment phase, and a completion phase.

FAS Pro
It contemplates a longer initial work phase in the case of requiring the use of auxiliary elements and / or corticotomies.
It is also complemented by an adjustment phase and a finalization phase.

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