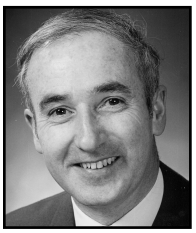
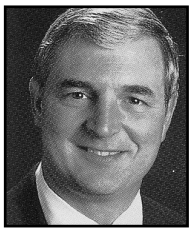
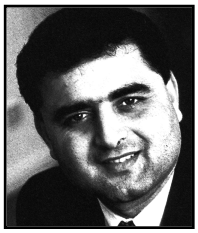
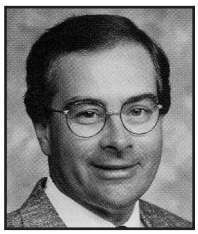
Twin Block DESIGNS

From Johns Dental Laboratories


Dr. William Clark


Dr. James Broadbent


Dr. Derek Mahony


Dr. Jay Gerber

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Quality appliances that "Snap In" the first time.

Twin Block™

How to get started.

If removable appliances are already a familiar part of your practice, you'll quickly see the benefits of using the Twin Block Technique. If not, you have the opportunity to start with the most advanced removable appliance available.

The Basic Appliance
The Twin Block Technique is an uncomplicated system that incorporates the use of upper and lower bite blocks. These blocks reposition the mandible and redirect occlusal forces to achieve rapid correction of malocclusions. They are comfortable and the patients wear them full-time, including eating time. The features of the Twin Block Technique result in quicker and easier treatment.

The upper block includes an expansion screw for lateral development and occlusal pads to cover the molars. The lower appliance includes occlusal pads to cover the lower bicuspids. These appliances interface at 70 degree angles to achieve (lock in) the desired forward position of the mandible.

Indications
1. Class II correction (A-P)
2. Vertical development--to open
3. Vertical correction--to close
4. Arch expansion
5. Arch lengthening

The Twin Block is More Popular Than Ever
The Twin Block Technique was developed by Dr. William Clark of Scotland during the early 1980s. Dr. Clark lectured and displayed the Technique at the European Orthodontic Meetings throughout the decade. Also, the Technique was shown at the AAO in the late '80s. In 1986, Dr. Clark lectured for many of Johns Dental customers and since then we have made thousands of Twin Block cases.

Modifications from the Basic Design
Several options are available for the Twin Block appliance including the use of a sagittal or expansion design in the upper and/or lower arches. The appliance can be modified as the case requires and designs may be used in any combination. For example, upper and lower expansion screws may be used for lateral development, an upper sagittal type appliance may be used with a basic lower appliance, and a facebow or reverse headgear may be incorporated in the case design. In addition to these options, a fixed/removable Twin Block can be made using a Wilson 3D type of appliance.

Since 1986, we have added variations from Dr. Clark's original design. Dr. Mahony, Dr. Broadbent, Dr. Gerber and Dr. McNamara have all made adjustments to solve various doctor and patient concerns. Now, you can prescribe a Twin Block with improvements to aesthetics, comfort and stability. All variations are explained in greater detail in this Family of Twin Block Designs manual.

Adjustment Techniques for Gaining Vertical Development
At each appointment the occlusal contacts on the maxillary molar pads should be relieved approximately 1/2-1 mm. Once the A-P is corrected, the appliances may be removed and the Phase II appliance placed so the bicuspids may erupt.

Adjustment for the Expansion Screw
Lateral or arch length development may be achieved by instructing the patient to adjust the screws 1/4 turn each week.

Laboratory Requirements
The laboratory requires upper and lower stone models. A wax construction bite in a forward and open position is also required, usually 4 to 5 mm forward and 4 to 5 mm open in the bicuspid area.

The uncomplicated Twin Block Technique is the most advanced removable appliance available that will achieve rapid correction of malocclusions, quickly and easily.

It is also now available in a fixed appliance and is becoming popular for non-compliant patients. (See Dr, Gerber design)

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Overview of Treatment

There are two phases of treatment with the Twin Block technique, the **active phase** and the **support phase**. To help you visualize the appliance designs and function during the overview, we will be referring to figures in this manual. The key components of the technique are the upper and lower appliances, the 70 degree interface ramps where the upper and lower appliances occlude, and the occlusal pads.

During the **active phase**, intra arch form changes are made such as widening and/or lengthening. Also included in the active phase are inter arch changes such as Class II correction and vertical development.

Figure A

Presents the upper and lower appliances at the first appointment. This buccal view shows the 70 degree interface, the upper pad covering the second bicuspid and the molars, and the lower pad covering the bicuspids. Note that 5 mm of space is required between the upper and lower bicuspids at the interface ramps. this space is needed to maintain the protrusive mandibular position. The occlusal inclined plane changes the function from Class II to Class I during correction.

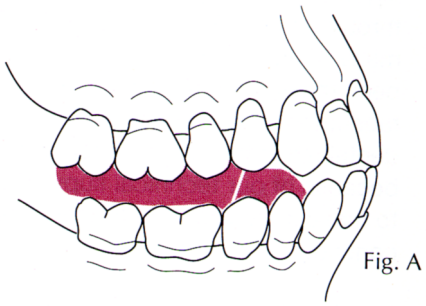


Fig. A

Figure B

Presents the upper and lower appliances as they are used for posterior vertical development. This buccal view shows that the upper pad has been gradually relieved - approximately 1/2 to 1 mm per appointment. This is done gradually to keep the tongue from overlapping the posterior and impeding vertical development of the molars. The lower appliance is the keystone for maintaining the vertical during treatment and should not be relieved. Also, during the acrylic relieving process, the 70 degree interface ramps should not be altered; alteration will interfere with their function.

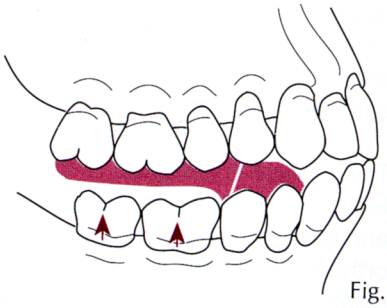


Fig. B

This illustration does not show the appliance screws. since vertical takes longer to achieve during treatment than arch width and A-P development, it is important to watch the progress of all three of these factors. Although treatment begins with screw activation and pad relief, consequently, screw activation may stop before all the vertical development has been achieved.

Figure C

Presents the upper and lower appliances during the final stages of the active treatment phase. This buccal view shows the upper appliance fully relieved; its function now is to maintain the forward mandibular position and the upper arch form. The lower molars are developing the needed vertical and the pads on the lower appliance are functioning as vertical stops. The active phase ends when there is no further need for the upper and lower appliances. This determination is made with the appliances removed. At that time, observe the anterior segment with the molars in contact.

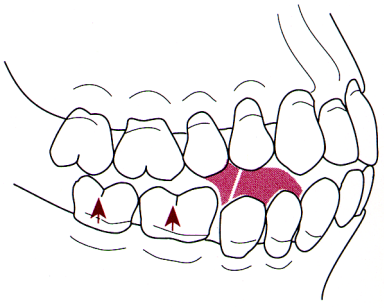


Fig. C

Has enough vertical been developed so that the overbite will be maintained at a desirable depth? Some overcorrection is required to insure that the molars will be in solid contact. (If not, continue treatment until this has been done.) The occlusion presented in figure D shows the support phase appliance maintaining the ideal overbite and overjet.

During the **support phase**, an inclined anterior bite plane appliance is used to maintain the Class ll correction. The support phase appliance is primarily designed to eruption of the bicuspids (and cuspids).

Figure D

Presents the upper support phase appliance when it is first seated. This buccal view shows the anterior ramp which maintains the mandibular class ll correction; the molars now maintain the vertical development. The lower bicuspids (and cuspids) are free to erupt into occlusion with the upper arch.

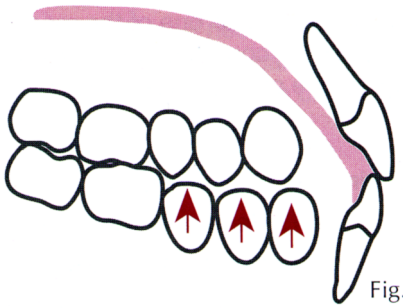


Fig. D

Figure E

Presents the upper support appliance after the patient's teeth have settled into full occlusion. The Class ll correction is complete; the patient has developed into a Class l occlusion. The support phase appliance is worn as a retainer for stability.

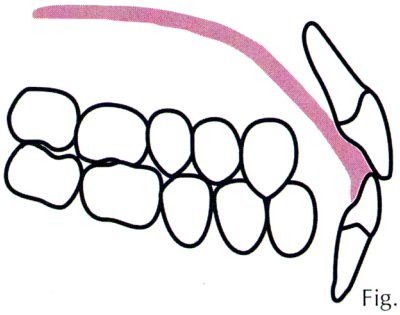


Fig. E

Comparison with other Functional Appliances

As you can see from the overview, the Twin Block technique is both simple and effective. Compared to other functional appliances, the technique stands up as the premier functional treatment modality available.

Esthetics & comfort - Patients maintain normal function and appearance because there are no lip , cheek or tongue pads. The patient's appearance is noticeably improved when the appliances are fitted. They look better and feel better about themselves during treatment.

Full time wear - Unlike some functional appliances, the Twin block appliances are not bulky. They are comfortable when sleeping, eating, playing (except swimming) and working. Continuous wear equals continuous application of light physiological forces, the forces that stimulate maximum growth response to correct the skeletal relationship.

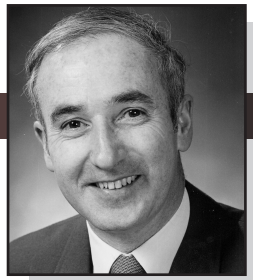
All age groups - Comfort, esthetics, and full-time wear means rapid correction of malocclusions for all age groups. Mixed, transitional and permanent dentition—the Twin Block technique meets the treatment challenges for all ages.

Arch control - With the Twin Block appliances you have the advantage of independent control of the upper and lower arch. The benefit is shorter treatment time.

Integrating treatment - Integration with conventional fixed braces is simpler than with any other functional appliance.

Dr. Clark Design

The Original Twin Block Design By Dr. William Clark



The Original Twin Block Design From Johns Dental Will Give Your Patients Better Aesthetics.

Here is a Twin Block design that stands the test of time.

Johns Dental was among the first laboratories to fabricate the Twin Block using Dr. Clark's original design. Today, with over thousands of successful Twin Block cases completed, we keep our goals simple: provide a quality appliance, at a fair price, that snaps in the first time.

Most of our doctors request Dr. Clark's design because it was not only the first one they learned, but it has given them consistent results for many years.

Read on to see the variety of modifications that are now available from Johns Dental Laboratories.

Which Twin Block has better aesthetics?

Many doctors tell us they like Dr. Clarks Twin Block design because it does not use a labial bow, so patients respond better to the aesthetics. They also like this design because they get better compliance.

How is the function?

The interface position keeps more acrylic bulk away from the anterior of appliance, which reduces speech problems.

How is the fit and retention?

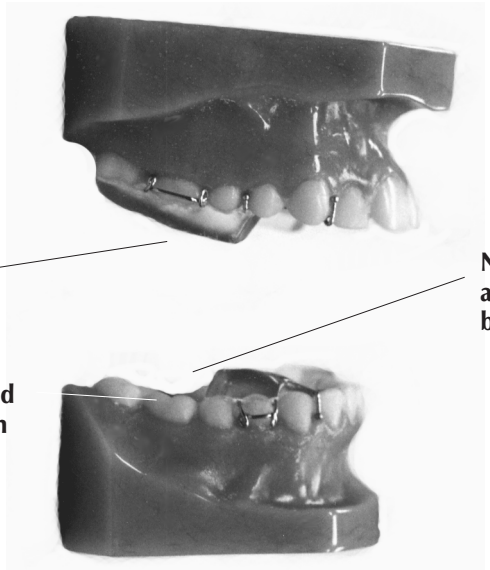
The clasping in this design has good stability and maximum retention that does not rely on lower second molars.

The original Twin Block technique was developed by Dr. William Clark of Scotland during the early 1980's.

Dr. Clark lectured and displayed the technique at the European orthodontic meetings throughout the decade.

This uncomplicated Twin Block technique is the most advanced removable appliance available that will achieve rapid correction of malocclusions, quickly and easily.

Dr. William Clark's original Twin Block design, shown below, is still the most requested today.



Blocks are farther back on arch for less anterior bulk which adds increased comfort and compliance

No posterior lingual acrylic which reduces bulk on lower arch

Dr. Clark's design does not use second molars for retention

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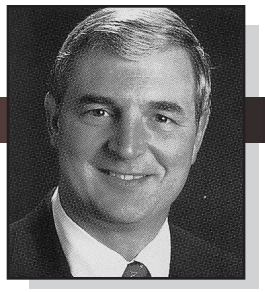
Dr. Broadbent Design

The Twin Block Design By Dr. James Broadbent



Orthodontist Dr. James Broadbent is a world authority on removable and functional appliances.

He can be seen throughout the U. S. lecturing about orthodontic treatment for "better smiles." When he is not traveling, he is running his orthodontic practice in Provo, Utah.

Dr. Broadbent's Twin Block Design From Johns Dental Is the Most Preferred By Adults.

Why do adults like Dr. Broadbent's design?

Dr. Broadbent has taken the original Twin Block design a step further.

Even though patients want to improve their appearance in the long run, they are still very conscious of how they look and speak during treatment. Dr. Broadbent's design enables orthodontic treatment while taking some of these factors into consideration.

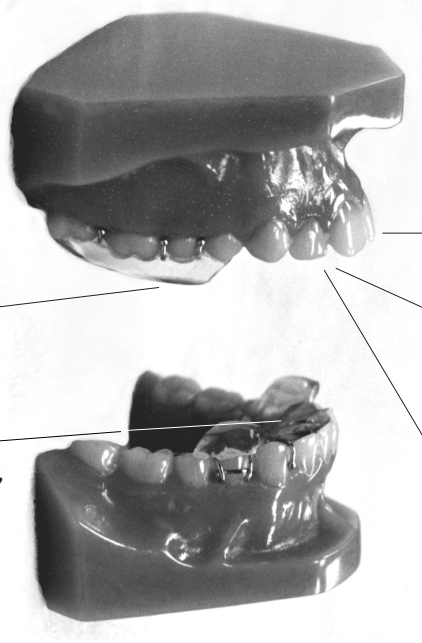
The most noticeable feature with this design is it is manufactured with the least amount of acrylic.

Which Twin Block offers improved speech?

Dr. Broadbent's design has reduced acrylic surrounding anterior teeth, so patient speech is not hindered.

How is the function?

You will get more flexibility in incisor movement due to lapped wires.



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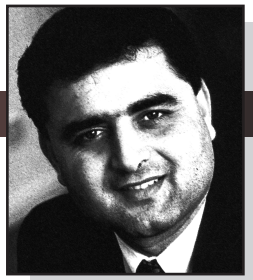
Dr. Mahony Design

The Twin Block Design By Dr. Derek Mahony



Dr. Derek Mahony acquired his Master of Science in Orthodontics at the University of London.

He maintains specialist orthodontic practices in Randwick and Parramatta, Australia.

Dr. Mahony continues to lecture about some of the latest breakthroughs in orthodontic treatment today.

Dr. Mahony's Twin Block Design From Johns Dental Allows More Teeth to Erupt at Once.

The Twin Block design continues to improve.

Dr. Mahony has taken the already successful Twin Block design a step further, by providing the best retention possible while allowing more teeth to erupt.

How is the function?

The biggest advantage to using Dr. Mahony's design is that his appliance allows lower bicuspids to erupt along with lower molars. This is great because *it eliminates the need of a support phase appliance*.

You will get added strength from the reinforcement wire located on the lower arch.

The grooves in the occlusal acrylic aid in eating by providing a rougher chewing surface.

You will also see a biting surface on the lower incisors that will aid in mastication.

His design also eliminates the risk of incisor flaring due to the lower acrylic cap.

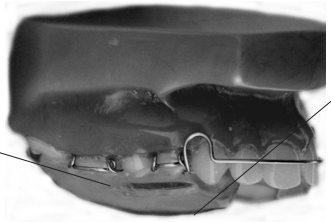
How is the fit and retention?

The upper labial bow aids in retention, incisor control and stops the "headgear" effect. This design offers the best retention available, while also allowing the lower bicuspids to erupt.

You will also get additional support with the use of lower acrylic extensions.

What purpose do the buccal acrylic grooves serve?

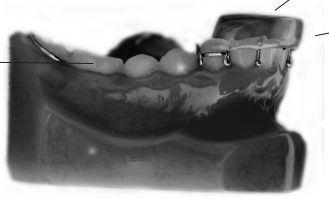
The acrylic grooves on the buccal prevent clasp distortion during removal, so patients or doctors will not have to worry about loss of retention.



Grooves in buccal of upper pads to ease removal and preserve wire adjustment

Slightly rougher occlusal acrylic for better function

Blocks end on lower cuspids to allow full posterior vertical development.



Posterior acrylic lingual extensions for additional stability and improved lower arch anchorage

Acrylic cap prevents incisor flaring

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Dr. Gerber Design

The Myofunctional Twin Block Design By Dr. Jay Gerber

Dr. Gerber's Neuromuscular Banded Block Design

The Twin Block design continues to improve.

Dr. Gerber has modified his Twin Block design to improve stability and neuromuscular treatment.

He has also extended the acrylic and eliminated all sharp edges to improve patient comfort as well as create a tighter fitting appliance.

> "I've extended the acrylic on my design and eliminated all sharp edges to improve patient comfort as well as create a tighter fitting appliance."

Modifications from the Basic Design

Several options are also available with this Twin Block appliance including the use of a sagittal or expansion design in the upper and/or lower arches.

The appliances can be modified as the case requires and designs may be used in any combination. For example, upper and lower expansion screws may be used for lateral development, an upper sagittal type appliance may be used with a basic lower appliance, and a facebow,or reverse headgear, may be incorporated in the case design. In addition to these options, a fixed/removable Twin Block and full banded versions can be made using a Wilson 3D type of appliance or a full banded style.

Indications

1. Class ll correction (A-P)
2. Vertical development--to open
3. Vertical correction--to close
4. Arch expansion
5. Arch lengthening

How is the fit and retention?

Dr. Gerber always clasps the first molars for increased stabilization. He also prefers round acrylic edges for a more comfortable fit.

Adjustment for the Expansion Screw

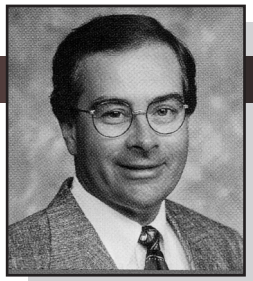
Lateral or arch length development may be achieved by instructing the patient to adjust the screws 1/4 turn each week. Expansion should be completed before banded block.

Laboratory Requirements

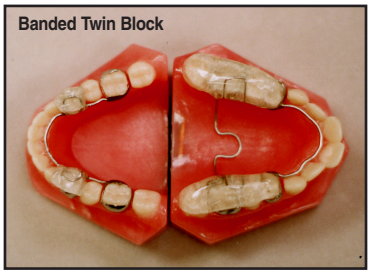
The laboratory requires upper and lower stone models. A wax construction bite in a forward and open position is also required, usually 4 to 5 mm forward and 4 to 5 mm open in the bicuspid area.

Patient Participation

I require patients to chew stick-free gum for two hours a day in order to close the bite with continuous force.



Dr. Jay Gerber operates his full time practice in Parkersburg, West Virginia at his new Center for Occlusal Studies. In 1980 he opened his Orthodontic Studies program where you will find him lecturing on orthodontic, TMJ and neuromuscular advancements throughout the United States.
Dr. Gerber is an IAO Senior Instructor and was recognized as the "1990 clinician of the year" by the AAFO.



For non-compliant patients, Dr. Gerber prescribes his "Banded Block" shown here.