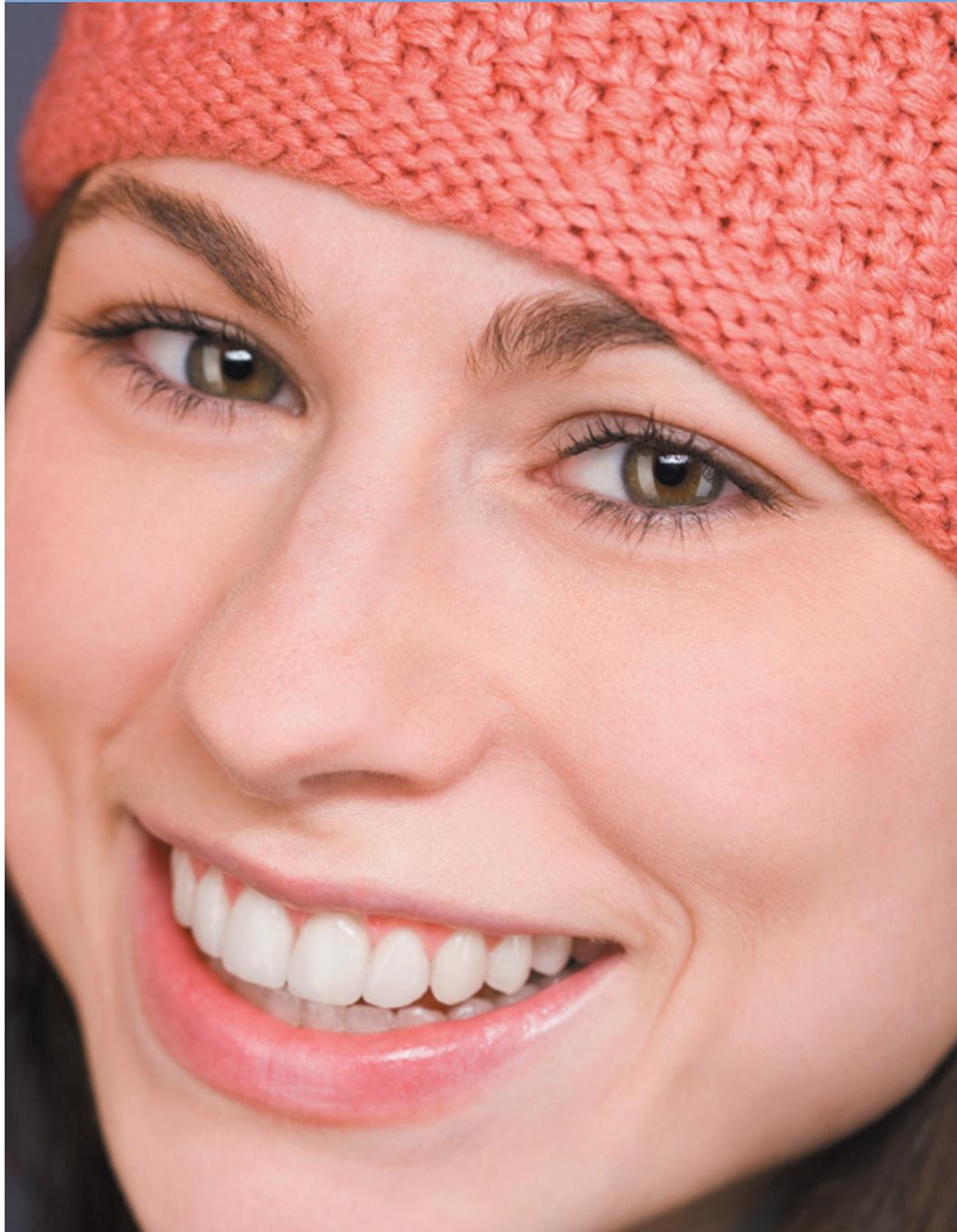


TransForce^{®2}

Arch Developer Appliances
Clinical Cases

New Horizons In Orthodontics



New Horizons In Orthodontics

Transverse and Sagittal Arch Development



William J. Clark

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Dr. William Clark has 50 years experience in orthodontic practice and continues to develop innovative appliances in orthodontic and orthopaedic techniques. He developed Twin Blocks in 1977 and is the author of *"Twin Block Functional Therapy: Applications in Dentofacial Orthopaedics"*, published by Mosby (1995 and, 2002).

Dr. Clark is the first recipient of an award of distinction from the British Orthodontic Society for an outstanding contribution to the specialty of orthodontics. In 2008, he received an award from the International Functional Association for outstanding personal international service to functionalism and orthodontics. In 2010, he completed a thesis on *"New Horizons in Orthodontics & Dentofacial Orthopaedics"* for a D.D.Sc. Degree from the University of Dundee.



Transverse Arch Developer



Sagittal Arch Developer

TransForce² Lingual Appliances

The case studies found on the following pages were performed by Dr. Clark. They illustrate the potential of preformed invisible lingual appliances for sagittal and transverse arch development. Light, biological forces generated by enclosed nickel titanium springs achieve an excellent response from patients of all ages, from interceptive treatment in mixed dentition to adult therapy.

TransForce² Lingual Appliances integrate with all types of conventional fixed appliances at any stage to simplify treatment. This approach is affordable and efficient, and typically reduces the time required in a fixed appliance by 50%. This is a very important factor, especially in adult therapy. In many cases alignment and arch form can be improved to a stage where invisible finishing appliances may be used to detail the occlusion.

TransForce² Appliances are constructed to the highest engineering standards by *Ortho Organizers[®]*, advancing the future of orthodontics. They do not cover the palate and are comfortable to wear, so patients of all ages appreciate the advantages of *TransForce²* Appliances.

Ease of Insertion

Placement blades are designed to insert easily into molar bands with standard .036" x .072" lingual sheaths

Aesthetic Appearance

Lingual placement for a virtually invisible appearance

Size Identification

Color-coded for easy identification

Optimum Patient Comfort

Nitanium[®] Coil Springs enclosed in expansion modules provide slow continuous force

No Laboratory Work Required

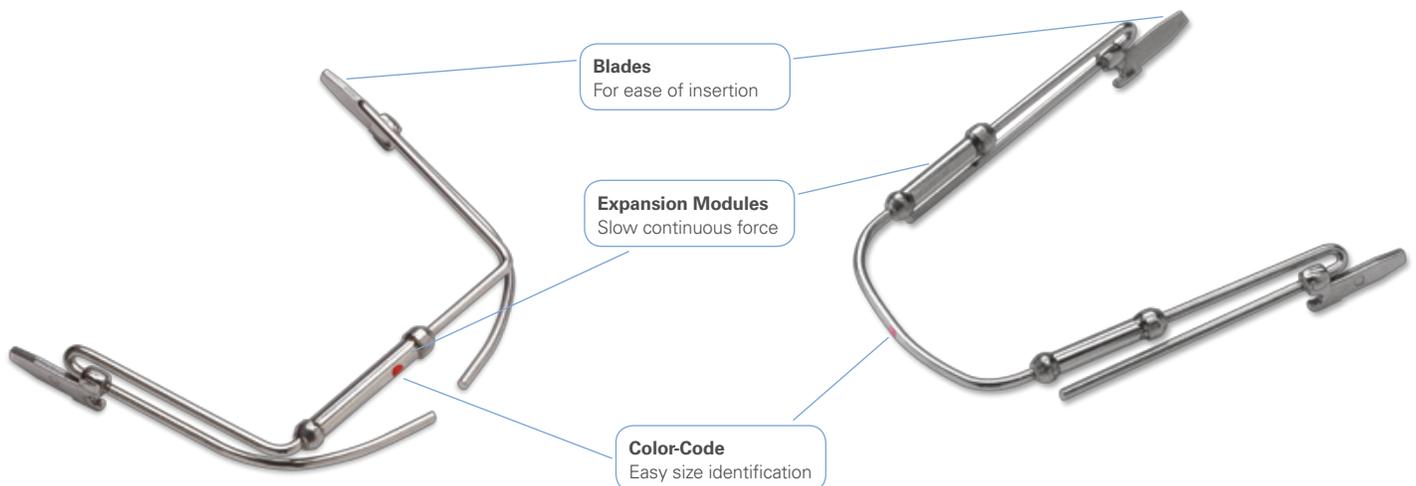
Select and order appliance by desired finish size

Less Inventory

Universal sizes for upper or lower arches – no need to carry separate inventory

Zero Patient Compliance

Appliance allows for up to 2 mm expansion every 6-8 weeks with minimum maintenance



TRANSVERSE ARCH DEVELOPMENT

Occlusion Before Treatment



Before Treatment

5 Months Treatment

Out of Retention



Occlusion After Treatment



Rapid improvement by maxillary arch development with a Transverse Expander corrected the crossbite and improved arch form in this case. After five months of treatment the Transverse Expander was kept in place for an additional three months. The final photographs show the occlusion and arch form four years later following 10 months of additional treatment with an upper fixed appliance.

TRANSVERSE AND SAGITTAL ARCH DEVELOPMENT

Occlusion Before Treatment



Before Treatment

After Transverse Expansion

After Arch Development



Occlusion After Treatment



In this case, the patient was unwilling to have fixed appliances, but was happy to wear lingual appliances. Upper Transverse and lower Sagittal Appliances were used and as treatment progressed the patient agreed to have a lower fixed appliance fitted. This severe malocclusion was not treated to an ideal result, but showed a marked improvement with simple treatment followed by the use of retainers.

SAGITTAL ARCH DEVELOPMENT

Six Months Treatment



Before Treatment

After *TransForce* Sagittal

Invisible Retainers



After Retention



This adolescent patient was treated entirely by *TransForce*² Sagittal Appliances, followed by invisible retainers. Lingually inclined upper and lower incisors responded well to treatment with lingual *TransForce*² Appliances to correct the arch form. This approach would apply equally to adult treatment of this type of malocclusion, followed by fixed lingual retainers.

TREATMENT OF LABIAL CROWDING



Before Treatment



4 Months Treatment



After Arch Development



In this case, rapid improvement by maxillary arch development with a Transverse Expander allowed efficient progression to fixed appliances over a period of five months with appointments at 10 week intervals. Final photographs were taken three years later.

ADULT THERAPY – ARCH DEVELOPMENT



This young adult with severe maxillary contraction was treated with *TransForce²* Appliances for lingual arch development. She enjoyed having invisible appliances for 11 months while her smile noticeably improved before proceeding with aesthetic fixed appliances to complete treatment.

FIXED APPLIANCES TO COMPLETE TREATMENT



The lingual approach presents minimum discomfort and inconvenience for adults. Invisible lingual appliances simplify treatment using biocompatible forces for gentle arch development. Typically the time in fixed appliances is reduced by 50%. In this case, treatment was completed in 19 months.

TRANSVERSE TRANSFORCE² APPLIANCES



This eight year old girl presented with a Class III malocclusion with severe upper labial crowding treated in mixed dentition with upper and lower *TransForce²* Transverse Expansion Appliances. Active treatment was completed in eight months, and the *TransForce²* Appliances remained in place for three months to retain.

FIXED APPLIANCES TO DETAIL OCCLUSION



After *TransForce²* Appliance retention, there was a period of observation while waiting for eruption of permanent teeth. This was followed by a short period of treatment with fixed appliances at age 11 to detail the occlusion. Interceptive treatment in mixed dentition to resolve anterior crowding simplified the finishing stage.

CLASS III SAGITTAL TRANSFORCE² APPLIANCE



This demonstrates interceptive treatment for a Class III malocclusion in mixed dentition with an upper Sagittal *TransForce*² Appliance. The lingual occlusion was corrected after three months, and the appliance was used as a retainer for an additional six months.

CLASS III SAGITTAL *TransForce*² APPLIANCE



No further treatment was required and the final photographs show the occlusion and arch form three years after eruption of permanent teeth. The profile and facial balance has improved after a short period of interceptive treatment with a Sagittal *TransForce*² Appliance.

PHASE 1 – TRANSVERSE ARCH DEVELOPMENT



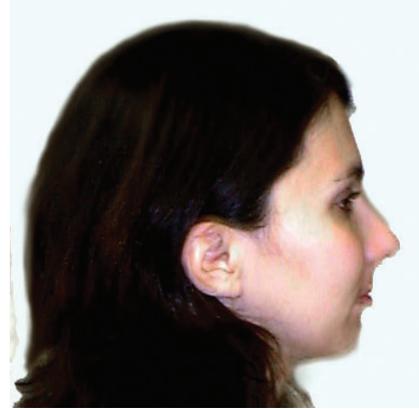
A Class II Division 2 malocclusion with severe maxillary contraction was treated with Transverse *TransForce²* Appliances to accommodate the unerupted upper lateral incisor. The incisor erupted after 12 months and the appliances acted as retainers for an additional six months.

SAGITTAL ARCH DEVELOPMENT



After eruption of permanent teeth *TransForce²* Sagittal Appliances correct slight residual crowding, followed by a lower fixed appliance for six months. No upper fixed appliance was required. Interceptive treatment with invisible lingual appliances simplified correction of this malocclusion.

ARCH DEVELOPMENT IN ADULT THERAPY



*TransForce*² Lingual Appliances can be combined with fixed appliances to enhance arch development in adult therapy. This may be the first step in treatment to make space to align a crowded labial segment before placing brackets. The patient benefits by wearing invisible appliances in the first phase of treatment, while also reducing the time spent in full-fixed appliances.

CARRIERE® SELF-LIGATING BRACKETS



The *Carriere* Self Ligating Bracket System is a highly efficient mechanism to detail the occlusion and deliver precision at the end of treatment. The brackets have a secure locking mechanism and are low profile, providing improved patient comfort, and delivering light, controlled forces throughout treatment. Treatment was completed in two years followed by fixed lingual retainers.



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