

TRIOTM
CLEAR



TRIOCLEARTM

Features and Scientific Background

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THE STORY OF TRIOCLEAR™

TrioClear™ clear aligners are groundbreaking in their design and represent an innovation which improves the orthodontic treatment process. We manufacture and provide dental professionals with multiple clear aligners which are custom-made, nearly invisible and removable. In a step-by-step fashion, these work to gradually move a patient's teeth into an ideal position. After many years of research and development, our team of specialists have created a predictable and cost-effective clear aligner solution for clinicians which also helps to keep chairside time to a minimum. TrioClear™ ONLY works with registered dentists as we believe any orthodontic treatment requires a dental professional to prescribe and monitor.

WHY TRIOCLEAR™?

TrioClear™ is a complete, clear aligner solution designed to transform your patient's smile. Offering a unique and comfortable alternating force concept, TrioClear™ aligners also incorporate increased gingival coverage; are manufactured with a state-of-the-art triple layered material and require fewer attachments. Most importantly, our treatments are mindful of putting patient safety first by ensuring that excellent quality aligner materials (BPA free) are used and that only safe forces of movement are applied. Using our online iDesign Clinical Simulation Software, TrioClear™ enables you and your patient to accurately visualise the predicted alignment and movements in advance.



Alternating Force Concept



Triple Layered Material



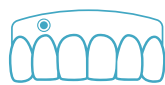
CE Marked Material



Bisphenol-A Free



Increased Gingival Coverage



Pre-Made Buttons



TrioDim Force™ Technology



Fewer Attachments



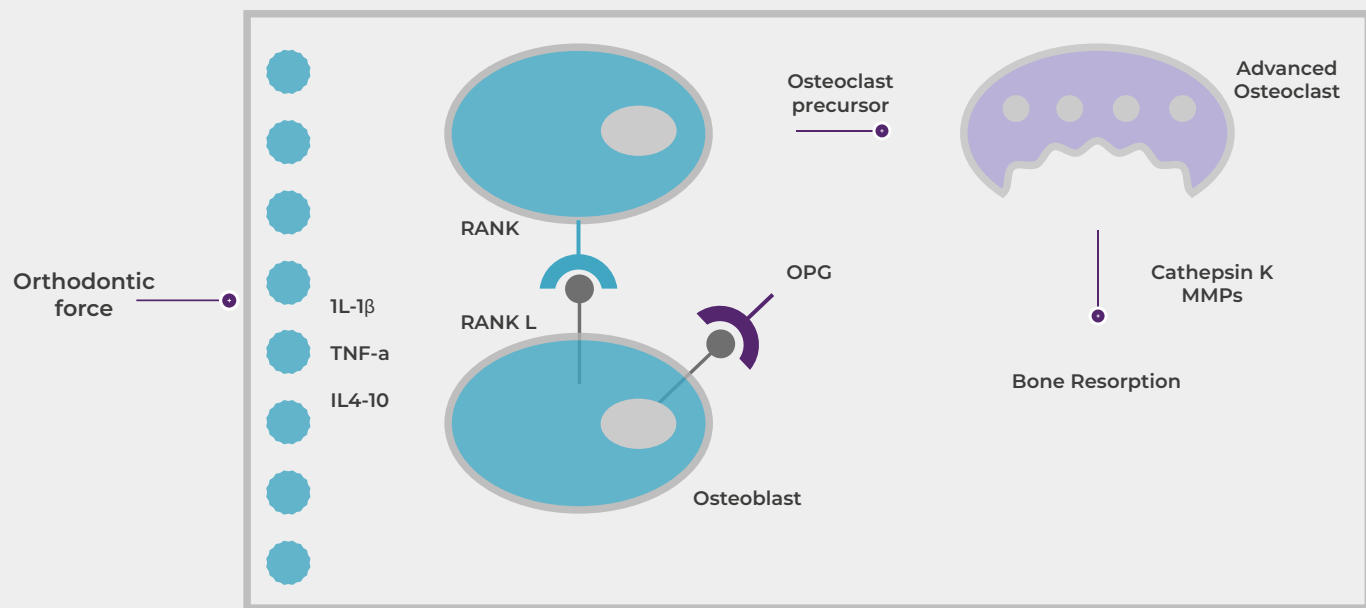
TrioClear™ iDesign Software

FULLY AUTOMATED PRODUCTION LINE

TrioClear™ aligners are precision manufactured on a 24-hour and fully automated production line. This world-class production system greatly improves the consistency, accuracy, efficiency and quality of our clear aligners which ultimately facilitates better patient outcomes.



HOW DOES TRIOCLEAR™ WORK?



It has been well documented that a direct bone resorption is associated with light force application allowing vascular patency. Indirect resorption is associated with heavy forces that cause crushing injury to the periodontal ligament (PDL) tissues and cell death*. Intermittent low force (<0.3 N/cm²) results in an inflammation process in the PDL which leads to tooth movement via minimal root resorption compared to a continuous force. Further studies have shown that forces between 0.20-0.26 N/cm² allows blood supply to be maintained, resulting in less cell damage and less root resorption¹. This all facilitates a bone remodeling process where teeth can be safely guided into a desired final position.



*studies: Miles PG, Rinchuse DJ, Rinchuse DJ, eds. Evidence-Based Clinical Orthodontics. Berlin, Germany: Quintessence Publishing, 2012. Acar A, Canyürek U, Kocaaga M, Erverdi N. Continuous vs. discontinuous force application and root resorption. Angle Orthod 1999;69:159-163; discussion 163-164. Levander E, Malmgren O, Eliasson S. Evaluation of root resorption in relation to two orthodontic treatment regimes. A clinical experimental study. Eur J Orthod 1994;16:223-228. Oppenheim A. Human tissue response to orthodontic intervention of short and long duration. Am J Orthod Oral Surg 1942;28:263-301. Reitan K. Effects of force magnitude and direction of tooth movement on different alveolar bone types. Angle Orthod 1964;34:244-255. Weiland F. Constant versus dissipating forces in orthodontics: the effect on initial tooth movement and root resorption. Eur J Orthod 2003;25:335-342. Kumasako-Haga T, Konoo T, Yamaguchi K, Hayashi H. Effect of 8-hour intermittent orthodontic force on osteoclasts and root resorption. Am J Orthod Dentofacial Orthop 2009;135:278, e1-8; discussion 278-279. Dijkman GE, Maltha JC, Kuijpers-Jagtman AM. Orthodontic treatment and root resorption. Ned Tijdschr Tandheelkd 1996;103:301-303. Maltha JC, Dijkman G. Discontinuous forces cause less extensive root resorption than continuous forces. Eur J Orthod 1996;18:420. Elkholy F, Lapatki B. Recommendation of a novel film-thickness sequence, 0.4, 0.5 and 0.75 mm, for aligner systems. JAO 2018;2:295-304.



AN ALTERNATING TWO-STEP CLEAR ALIGNER SYSTEM

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Other single material/thickness clear aligner systems can result in excessive forces being applied to individual teeth. This leads to an increased chance of root resorption and less predictable movements. Instead, TrioClear™ utilises a combination of 1 soft and 1 hard aligner to achieve around 0.6mm tooth movement in 14 days. This unique Alternating Force Concept has been proven to improve the predictability of orthodontic teeth movements. The use of a soft aligner for every movement helps to ensure that more gentle forces are initially applied, before finishing up the final movement with a hard aligner. Elkholy and Lapatki concluded from their study that the use of a sequence of progressively thicker aligners substantially reduces the force values exerted and ensures a relatively constant load increase for each individual setup step*. It is important to note that treatment time is unaffected because a larger range of movement is able to be accomplished compared to using a single thickness aligner system. This principle of alternating between soft and hard aligners ensures a perfect range of orthodontic forces. The principle of this light force and then subsequent force reactivation might be compared with the principle of leveling and alignment in fixed appliance therapy*.



		Days per Step*	Aligner Thickness	Benefits
	SOFT	7 days	0.5mm	<ul style="list-style-type: none">Eases the patient in with greater comfortFlexible and easy to insert and removeStretches ligamentsStimulates bone remodelling
	HARD	7 days	0.75mm	<ul style="list-style-type: none">Increased rigidity for programmed movementHolds teeth in place while remodelling startsIncreased rigidity and shape memory avoids material weakening or distortionProtects against micro-relapse

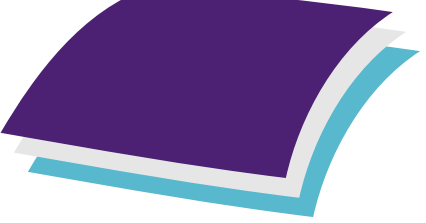
* Each step's wear time may vary at the dentist's discretion, subjected to good compliance and fit as the patient progresses.

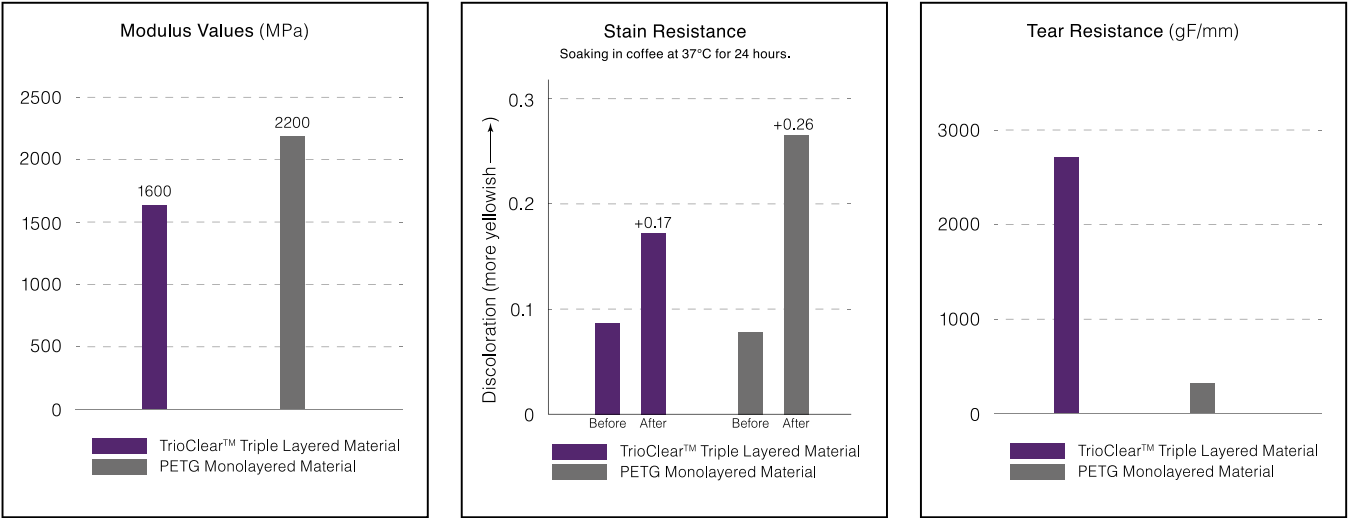
*studies: Schupp, W., & Haubrich, J. (2023). Aligner Orthodontics and Orofacial Orthopedics (2nd ed.). Quintessence Publishing. 2. Elkholy, F., & Lapatki, B. G. (2018). Recommendation of a novel film-thick- ness sequence, 0.4, 0.5 and 0.75 mm, for aligner systems. Journal of Aligner Orthodontics, 2(4), 295–304.



TRIPLE LAYERED MATERIAL

TrioClear™ 's advanced triple-layered material, which is CE marked, allows greater performance in the degree of comfort, elastic force retention, stain and tear resistance than the PETG monolayered material found in many other aligner systems.



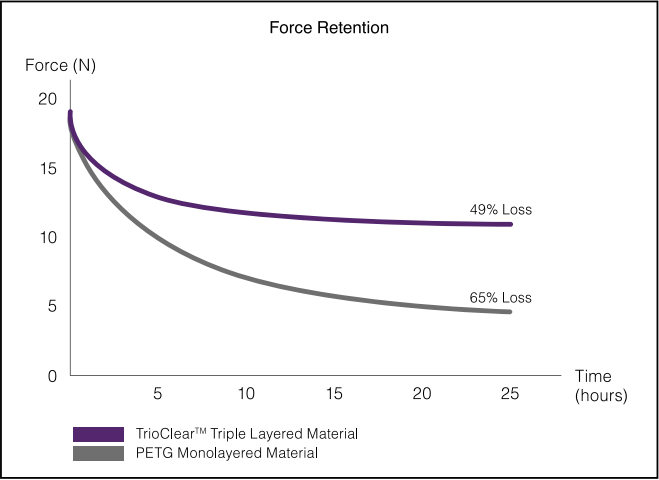


- 1. DEGREE OF COMFORT:**

Studies show that our advanced material has a balanced modulus, which enables more precise teeth movements while providing additional comfort.
- 2. STAIN RESISTANCE:**

Our aligner material outperforms monolayered PETG aligners in stain resistance. Therefore, TrioClear™ aligners become less discoloured when compared to other clear aligner plastics.
- 3. TEAR RESISTANCE:**

Studies show that our triple layered material with elastomers has improved tear resistance properties, giving TrioClear™ aligners additional durability and robustness when compared to other monolayered materials.

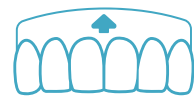
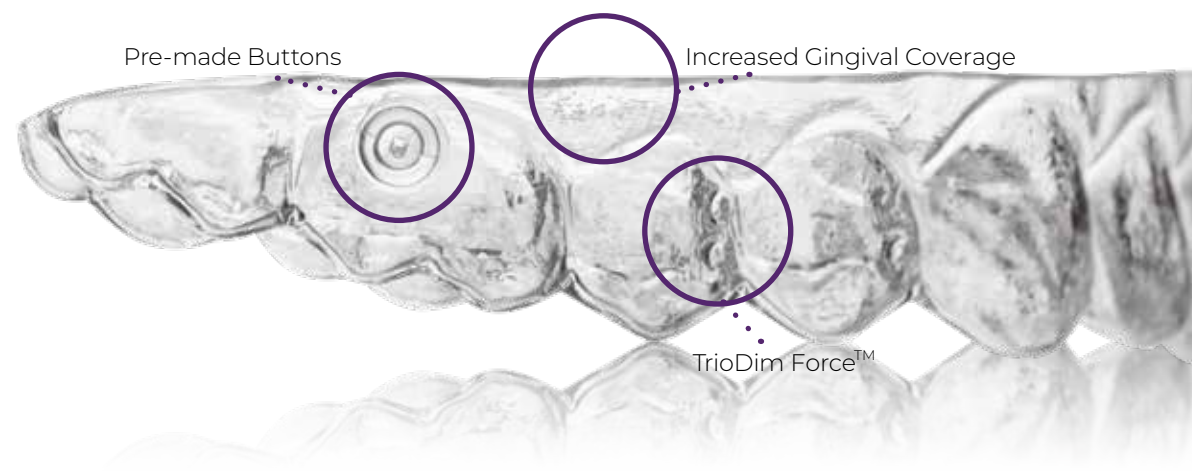


4. FORCE RETENTION

TrioClear™'s advanced triple layered material provides better force retention, which means our clear aligners can exert a more consistent orthodontic force for a longer period of time. This greatly improves the predictability of planned tooth movements.

5. BISPHENOL-A FREE MATERIAL

Bisphenol-A (BPA) is a chemical commonly used to harden plastic, which may potentially harm our health. BPA-free products are essentially the best choice for patients. TrioClear™ products are all BPA-free to ensure patients feel at ease when using our clear aligners on a daily bases.



INCREASED GINGIVAL COVERAGE

Extended gingival coverage results in a larger amount of area being covered by the aligners, particularly for teeth with short crown height. The TrioClear™ aligner margin is also less visible to others since it is placed deeper from the cervical margin of each tooth, making the aligners more aesthetic, particularly for patients with varying lip line positions. Studies have shown that a greater gingival coverage by the aligner margin achieves an increase in retention when compared to clear aligners with margins following the scallop of the teeth*.

Furthermore, studies have also shown that coverage of the gingival edge increases the amount of acceptable orthodontic forces. The increased gingival coverage also provides space for our technicians to apply pre-formed buttons directly, which saves chairside time and this also avoids the risk of debonding. However, we also understand that for some situations, non-gingival coverage aligners are beneficial. Therefore, TrioClear™ allows dentists to choose scalloped margin aligners when required.



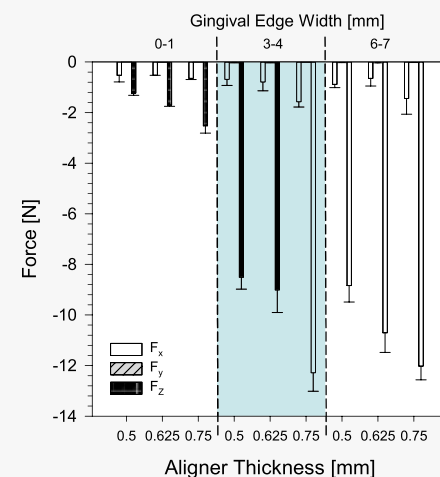
PRE-MADE BUTTONS DIRECTLY ON ALIGNER

Our skilled technicians place buttons directly on TrioClear™ aligners that work with elastics and auxiliaries. Therefore, there is no risk of debonding compared to placing buttons directly onto the teeth. This reduces unnecessary patient visits and saves clinician's chairside time. Furthermore, different biomechanics are also possible with buttons pressed higher in the gingival coverage area. For specific tooth movements, additional cutouts and engagement hooks on the aligners are also possible.



FEWER ATTACHEMENTS

Attachments used in other clear aligner brands take up precious clinical time as the clinician needs to apply and also reapply them when they dislodge. Furthermore, these are easily stained at times, and excessive flush on the attachments can cause poor aligner fit. TrioClear™'s use of aligners with increased gingival coverage decreases the number of attachments required without affecting predictability or effectiveness. Therefore, TrioClear™ is able to achieve an aesthetic result whilst reducing chair-side time.

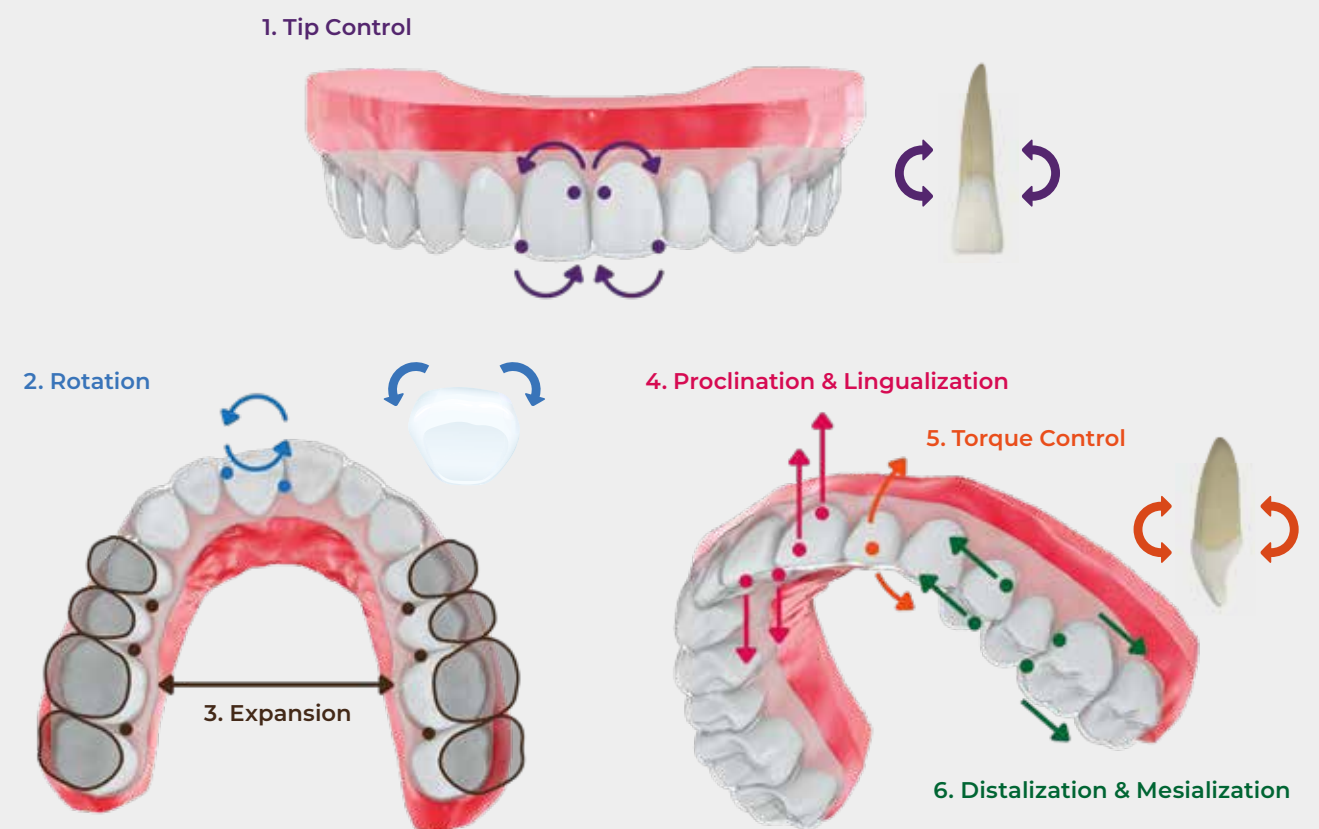


Aligners which have their margins around 3mm past the cervical margin have been shown to produce a larger movement force compared to aligners without gingival coverage. Therefore, the movement force applied to each tooth begins gently and slowly increases, resulting in less discomfort. As the thickness of the aligner changes sequentially, it shows an increase in movement force and can maintain a continuous orthodontic force.



TRIODIM FORCE™ TECHNOLOGY

Our experienced technicians can implement the TrioDim Force™ technology in any TrioClear™ case upon request (especially useful for refinements). Depending on the specific movement required, our dental technicians will design divots at very specific locations according to the TrioDim Force™ principles. Every divot is measured and specifically placed with special instruments to ensure their location is accurate. Below is a simple summary of the various achievable movements and their corresponding divot location.

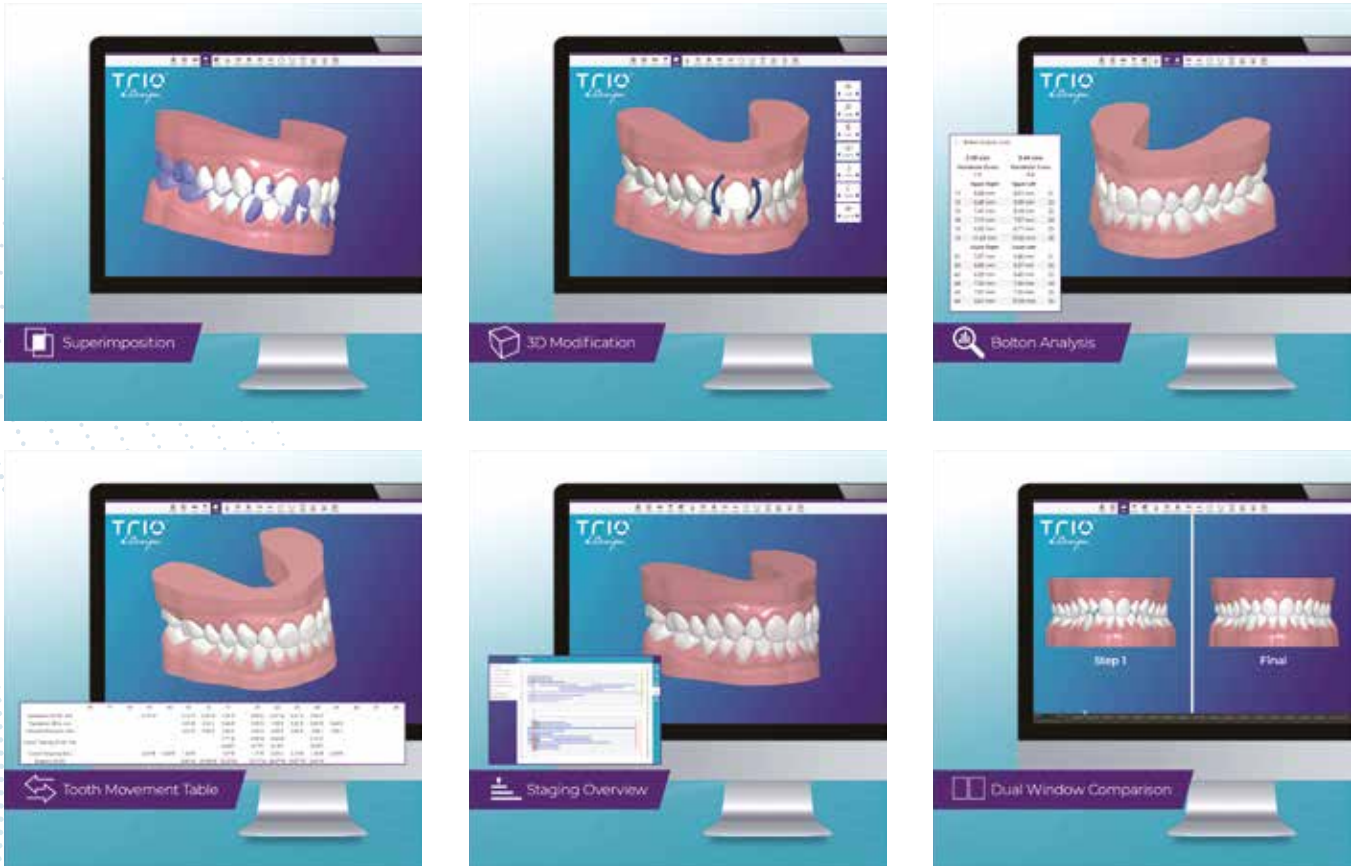


*Studies: Lixia Gao and Andrea Wichelhou (2017) Forces and movements delivered by the aligner to a maxillary central incisor for palatal tipping and intrusion. The Angle Orthodontist: July 2017, Vol. 87, No. 4, pp. 534-54

TRIOCLEAR™ iDESIGN SOFTWARE



The TrioClear™ technical team will analyse each of your submitted cases carefully to provide you with a detailed treatment plan that assists you in achieving your patient's desired smile. Our Trio iDesign Clinical Simulation Software allows the dentist to clearly visualise each treatment plan at various viewing angles and stages. Each clinical simulation is fully editable so that a dental professional can submit a variety of modifications to best reach the end result. Furthermore, each treatment simulation design has an external link for sharing with other colleagues or patients.



OTHER ALIGNER BRANDS

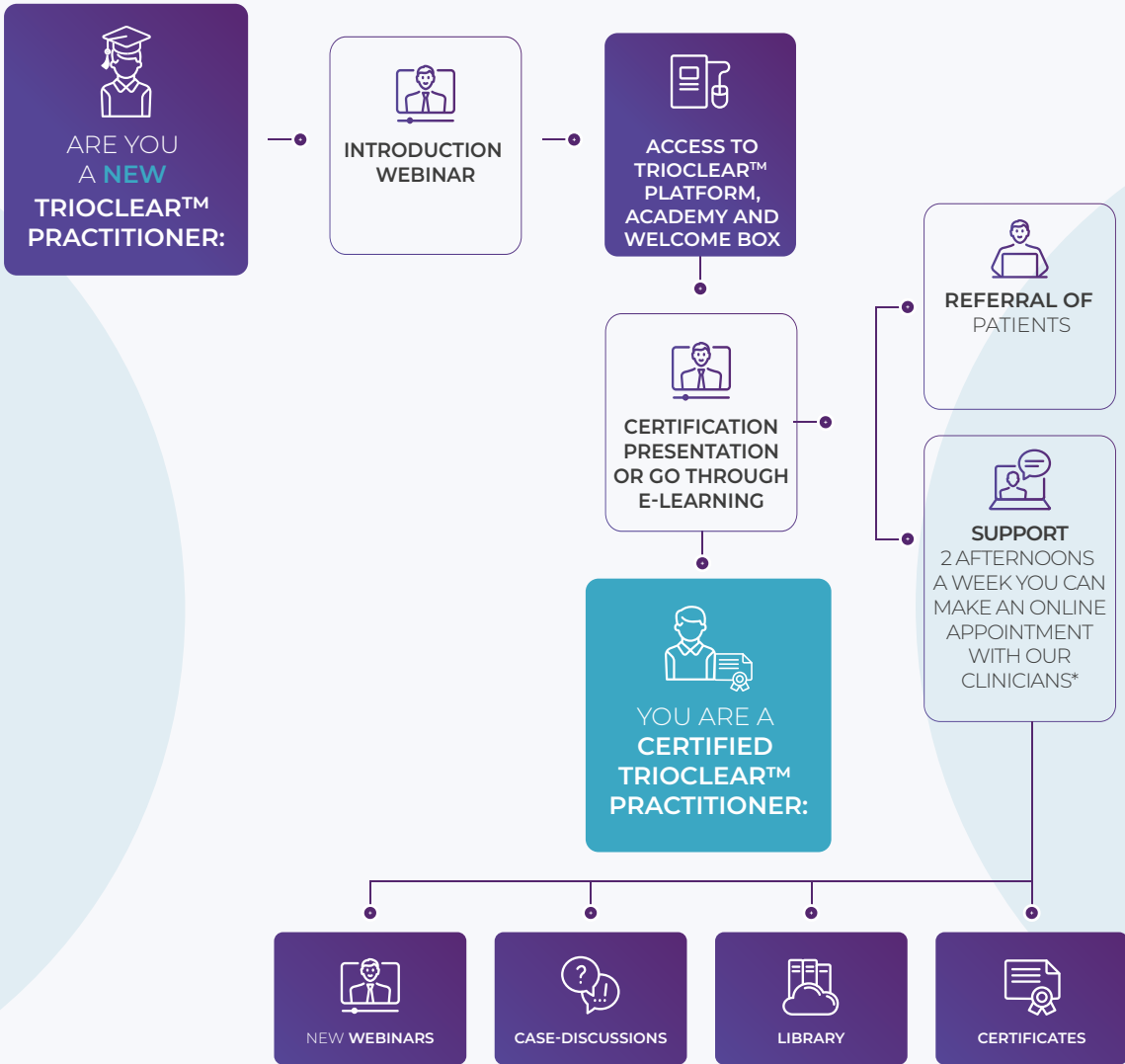
- 1. Gingival areas not covered
- 2. High reliance on attachments
- 3. Often manufactured using inferior quality materials.
- 4. Stain easily

TRIOCLEAR™

- 1. **Increased gingival coverage**
Increased control of orthodontic force and provides extra protection to teeth movements
- 2. **Triodim force™ divots**
Facilitates individual tooth movement to the ideal positions without attachments
- 3. **Pre-made buttons on aligners**
More comfortable and avoids scratched gums and ulcers whilst eating
- 4. **Fewer attachments**
Reduces chair time and increases aesthetics

TRAINING AND CLINICAL SUPPORT







Supporting the practitioners using TrioClear™ aligners is incredibly important to us. If you want to become a practitioner, you will follow several steps in our training process. After attending an introductory webinar, you will gain access to our TrioClear™ e-learning modules. You will then be guided through your first three clinical cases by our TrioClear™ specialists. In addition to this guidance, once certified, if you have an extended complex case, you will have the option to book an online appointment with our own highly experienced TrioClear™ practitioner:
Dr Mark Friend
BMSc(Hons) BDS(Hons) MFGDP(UK)



*We highly recommend that you complete the 5 online TrioClear™ educational modules on the Modern Dental Academy (our e-learning platform).

TREATMENT OPTIONS

TrioClear™ offers various options tailored to the orthodontic requirements of individual patients. TrioClear™ Flex, Simple and Touch Up are designed specifically for general dentistry. We recommend the use of TrioClear™ Complete only if you have years of orthodontic knowledge and experience. Each TrioClear™ treatment option has an associated cost (depending on the number of aligners required). Please refer to our separate Price List which will provide you with this information.

						
	FLEX	SIMPLE	TOUCH-UP	TOUCH-UP PLUS	TOUCH-UP ULTRA	COMPLETE
Number of Steps	2 to 10	Up to 12	Up to 18	Up to 28	Up to 50	Unlimited
Recommended Movement	By recommendation	4-4	5-5	6-6	7-7	7-7
Warranty Period*	No Warranty	6 months	1 year	2 years	3 years	5 years
Refinement*						
Quota within Warranty Period	None	None	• 1 time • up to 18 steps	• 2 times • up to 28 steps (in total)	• 2 times • up to 50 steps (in total)	Unlimited
ReTrack**						
Quota within Warranty Period	None	• 1 time	• 2 times	3 times	• 3 times	Unlimited
Treatment Cases	• Orthodontic Relapse • Minor Tooth Movement • Diastema Closure • Pre-restoration space preparation	• Orthodontic Relapse • Minor Tooth Movement • Diastema Closure • Pre-restoration space preparation	• Spacing & Mild Crowding • Deep Bite: <2mm • Open Bite: <1mm • Midline Discrepancy: <2mm • Cross Bite: <1mm	• Spacing & Mild Crowding • Deep Bite: <3mm • Open Bite: <2mm • Midline Discrepancy: <3mm • Cross Bite: <2mm	• Extraction Case • Distalization Movement: <3mm • Deep Bite: <4mm • Open Bite: <3mm • Midline Discrepancy: <4mm • Cross Bite: <3mm	• Extraction Case • Distalization Movement: <3mm • Deep Bite: <4mm • Open Bite: <3mm • Midline Discrepancy: <4mm • Cross Bite: <3mm

*A Refinement is requested when a complete redesign of a Treatment Plan is required. New instructions, movements and orthodontic accessories may be requested within the warranty period.

**A Re-Track is requested mid-treatment to manage teeth that are not tracking with the clinical simulation. It is not possible to add new orthodontic accessories (such as bite ramps, attachments or TrioDim™ Force dimples) to a Retrack. The result of the approved treatment must remain the same. A Re-Track can only be requested 60 days after an aligner despatch date.

The Retrack or Refinement request period begins from the date that the Treatment Plan is approved and the cost for each, outside of the Treatment Plan allowance, can be found in the TrioClear™ Price List.




CLINICAL INDICATIONS

TrioClear™ is an exceptionally versatile solution. Take advantage of this treatment option and meet the growing orthodontic demands of patients in your practice.


- TrioClear™ gives you the ability to:
- Make cosmetic improvements.
 - Treat malocclusion.
 - Improve periodontal health and
 - Provide a pre-operative solution to improve the outcome of future restorative work.

The below images show the most common indications that TrioClear™ aligners are used to treat:




Normal Bite


Bite Types




Overbite (Back teeth)




Underbite




Excessive Spacing




Deep Bite



Crossbite (Misalignment)



Crowding



Open Bite

BROCHURE TRIOCLEAR™ 13



ECODONT™ RETAINER OPTIONS

Ecodont™ is our range of retainer appliances, used after clear aligner therapy. Each are specifically designed to help prevent orthodontic relapse. All of our products are Bisphenol-A (BPA) free; are manufactured in our world-class manufacturing suite and are ordered via the TrioClear™ Online Platform.



1) Ecodont™ Clear Removable Retainers.

3 Sets Provided
Triple-Layered Material
Thickness: 1mm
Warranty: 3 months



2) Ecodont™ Combi-Retainer.

Fixed+Removable retention in one appliance (jig)
Includes 2 spare clear removable retainers
Two wire options available
Easy to Place



3) Ecodont™ Whitening Retainer

Includes reservoirs to facilitate whitening alongside retention.
Triple-Layered Material
Thickness: 1mm
Warranty: 3 months



4) Ecodont™ Fixed Retainer

Braided stainless steel wire that connects to the lingual surfaces of the front teeth (3-3)
Two wire options available
Choose position of placing aid (Middle or End of the wire)

3 KEY FEATURES



Bisphenol-A Free



Raw Material
from Germany



1.0mm Thickness

YOUR LOCAL TEAM



The TrioClear™ U.K. and Ireland local team is led by dental professionals to ensure you receive excellent clinical support and guidance whenever you need it.



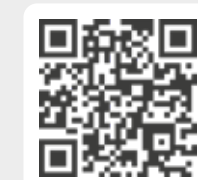
Dr Swati Mallick BDS, MDS
TrioClear™ Clinical and Technical Support
Over 15 years of experience in clinical and technical dentistry.



Dr Mark Friend
BMSc(Hons) BDS(Hons) MFGDP(UK)
TrioClear™ Clinical Advisor
TrioClear™ Practitioner with extensive experience in clear aligner therapy across various systems.



Nathan Stewart BSc (Hons)
TrioClear™ National Manager
Almost 10 years of experience in the dental industry and a direct point of contact for any queries.
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If you would like to learn more,
we welcome you to either
contact us or visit our website:

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info@scdlab.co.uk



A Worldwide and Innovative Clear Aligner System.

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