

The
Science
Behind
Incredible
Smiles.

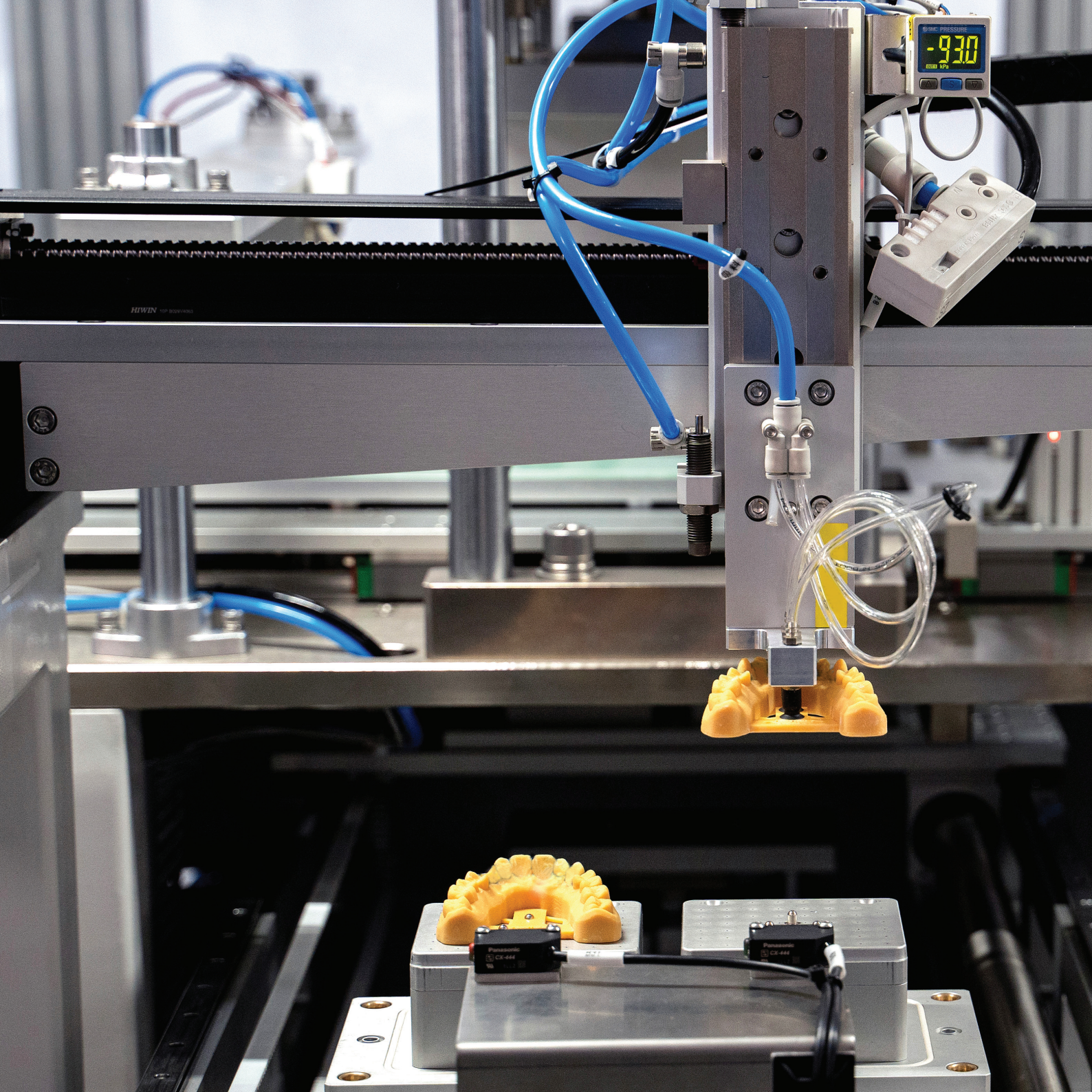
The TrioClear® Story Starts With a Clear Goal

To design clear aligners that make the orthodontic treatment process easier and more effective than ever. Our system uses multiple removable aligners as part of a unique – and uniquely-comfortable – progressive force concept. These nearly invisible aligners are custom-made to gradually move patients' teeth to the ideal position. In doing so, we can provide dentists with a predictable and practical aligner solution, while keeping chair time to a minimum.



PROGRESS. EASIER PROCESSES. INCREDIBLE PROGRESS.

TrioClear®

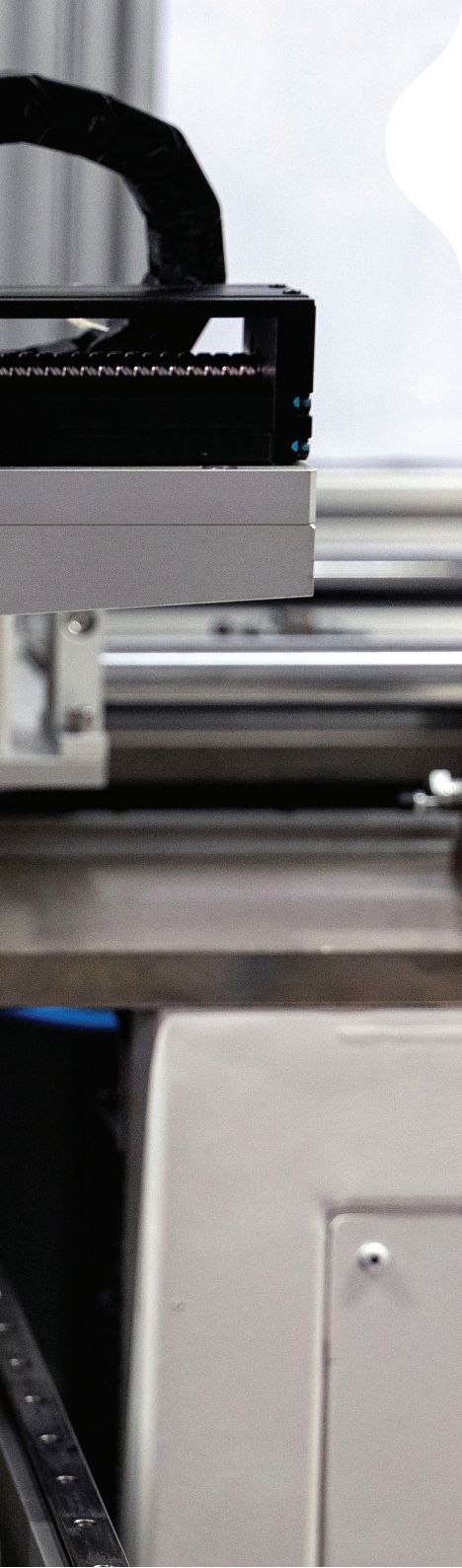


Why TrioClear®?

- We only work with dentists – as we believe any orthodontic treatment requires a professional
- Our aligners stay in place with minimal attachments and TrioDim Force™ Technology which improves the control of teeth movement
- Clinical simulation software helps you accurately visualise alignment and movement before it happens
- Safe movements are designed for mild to moderate cases
- Our trays are made with nearly invisible CE-marked, BPA-free material

A Streamlined Process for Incredible Consistency

TrioClear® is produced on a fully automated production line, which operates 24 hours a day. This state-of-the-art production system means we significantly improve the consistency, accuracy and efficiency of our aligners – while greatly decreasing the costs too.



Progressive Force Concept



FDA Cleared



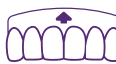
Triple Layered Material



CE Marked Material



Bisphenol-A Free



Increased Gingival Coverage



Pre-Made Buttons



TrioDim Force™ Technology



Minimal Attachment



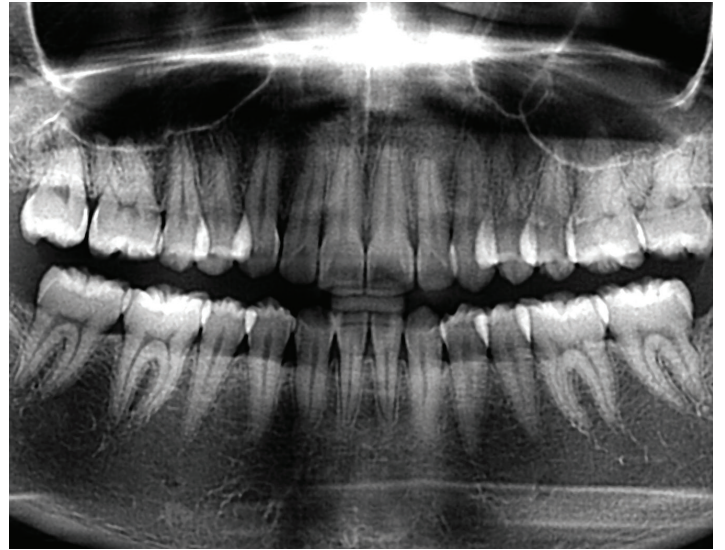
Trio iDesign™ Software

How Does TrioClear® Work?

Many dental professionals would know that direct bone resorption is associated with light force application that allows for vascular potency. Indirect resorption is associated with heavy forces that cause crushing injury to the periodontal ligament (PDL) tissues and ultimately cell death¹.

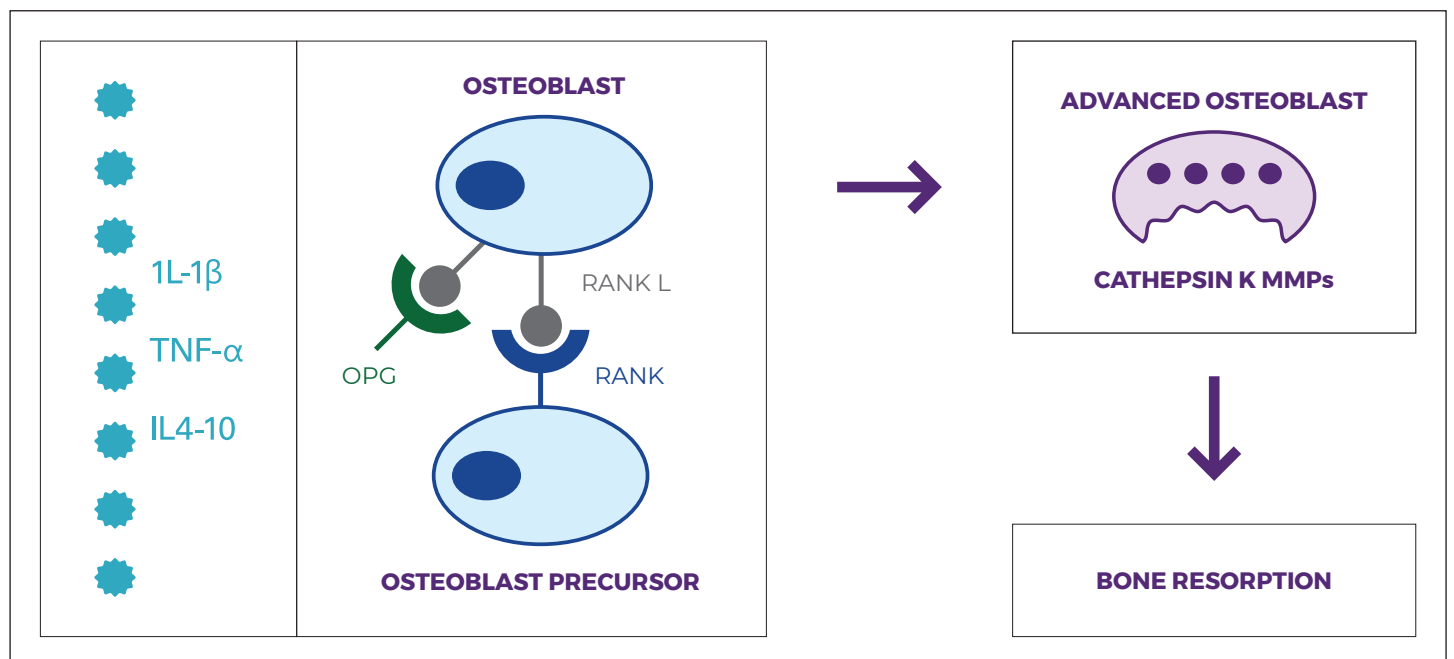
Intermittent low force (<0.3N/cm²) results in an inflammation process in the PDL – which leads to tooth movement through minimal root resorption (compared to a continuous force).

Further studies have also shown that forces between 0.20-0.26N/cm² allow for blood supply to be maintained, resulting in less cell damage and less root resorption¹.

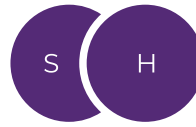


ORTHODONTIC FORCE

The orthodontic force applied on the tooth structure documented below.



Progressive Force Concept



Soft ~0.5mm thickness

Single-material aligner systems that use the same thickness for all aligners can often lead to forces that are too much for individual teeth – which has a higher chance of causing root resorption and unpredictable movements. Alternatively, combining one soft and one hard aligner contributes to around 0.6mm tooth movement.

By starting every sequence of movement with a soft aligner, we can make sure that any force that's first expressed is low – before finishing up the final movement with a hard aligner.

A study by Elkholy and Lapatki concluded that using a sequence of progressive thickness significantly reduces the force being exerted,

Hard ~0.7mm thickness

making for a relatively constant load increase for each individual set-up step². It's also worth noting that treatment time is unaffected, since a larger range of movement can be accomplished compared to a single thickness aligner system.

Alternating between soft and hard aligners makes for the 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 therapy¹. It's a unique Progressive Force Concept that's been proven to make orthodontic tooth movements very predictable. We're certain you'll see the same when treating your patients.

	Days per step*	Aligner Thickness	Benefits
<p>Soft</p>	7 days	~0.5mm	<ul style="list-style-type: none"> • Eases the patient in with greater comfort • Flexible and easy to insert/remove • Stretches ligaments • Stimulates bone remodelling

	Days per step*	Aligner Thickness	Benefits
<p>Hard</p>	7 days	~0.7mm	<ul style="list-style-type: none"> • Increased rigidity for programmed movement • Holds teeth in place while remodelling occurs • More sustainable without material distorting or weakening • Protects against micro-relapse

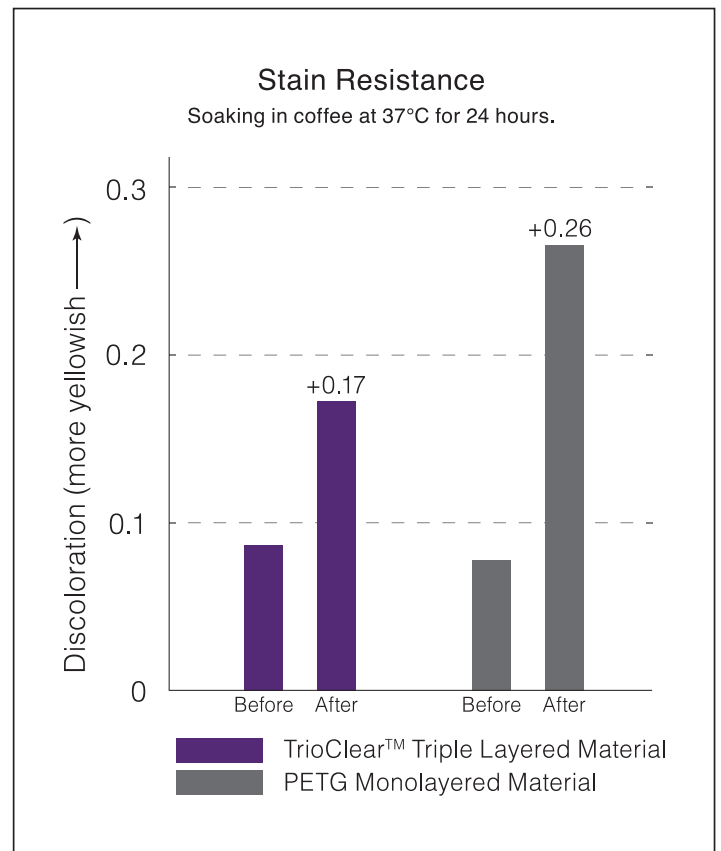
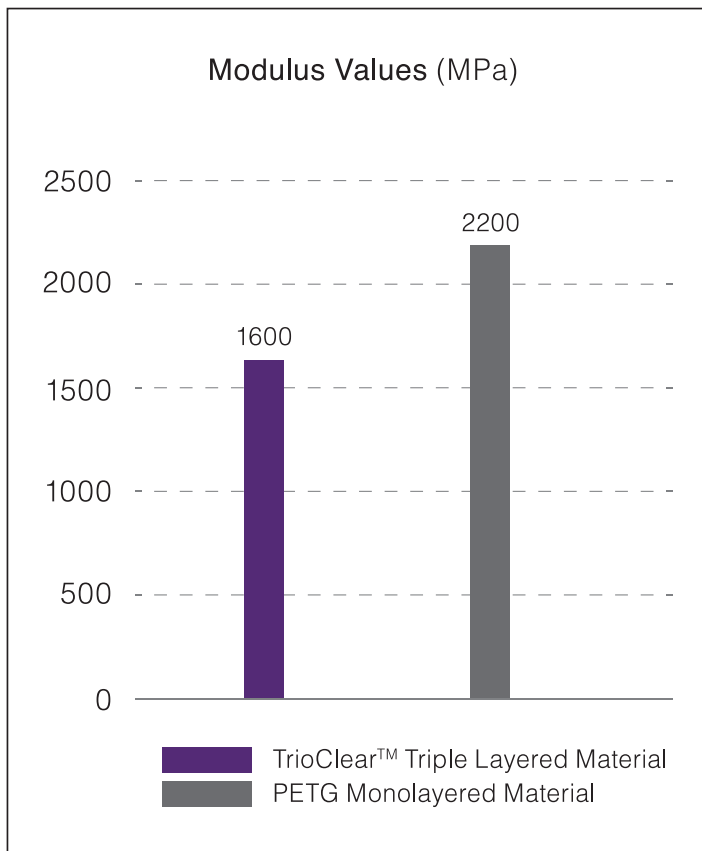
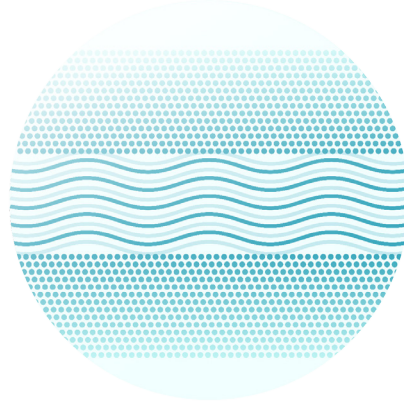
* Each step's changing time may vary at the dentist's discretion, subjected to good compliance and fit as the patient progresses.

Reference:
 1. 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-thickness sequence, 0.4, 0.5 and 0.75 mm, for aligner systems. Journal of Aligner Orthodontics, 2(4), 295-304.

The Material That Makes TrioClear[®]



TrioClear's[®] new triple-layered, CE-marked material offers a number of benefits compared to the PETG monolayered material which is found in many other aligner systems.



1. MORE COMFORT

Studies show that the new material has a balanced modulus – which enables more precise movement of teeth while providing extra comfort.

2. LESS STAINS

The new material has a greater stain resistance compared to the monolayered material – making TrioClear[®] aligners less likely to become discoloured compared to some clear aligner plastics.

Bisphenol-A Free Material

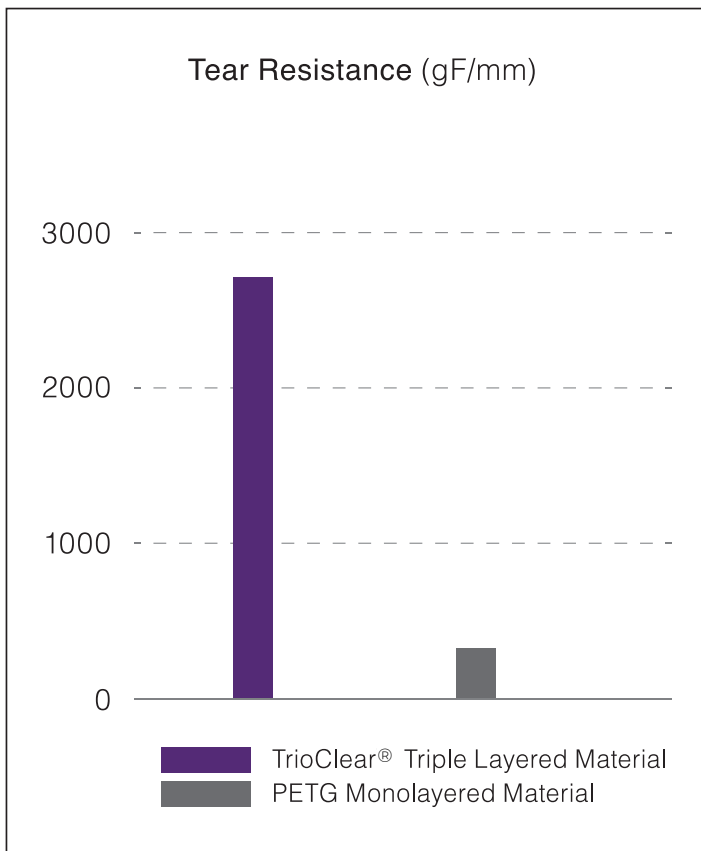


Bisphenol-A (BPA) is a chemical that's been commonly used to harden plastic for many years – which could potentially harm our health. This means BPA-free products are essentially the best choice for patients – and TrioClear® products are all BPA-free.

FDA Cleared

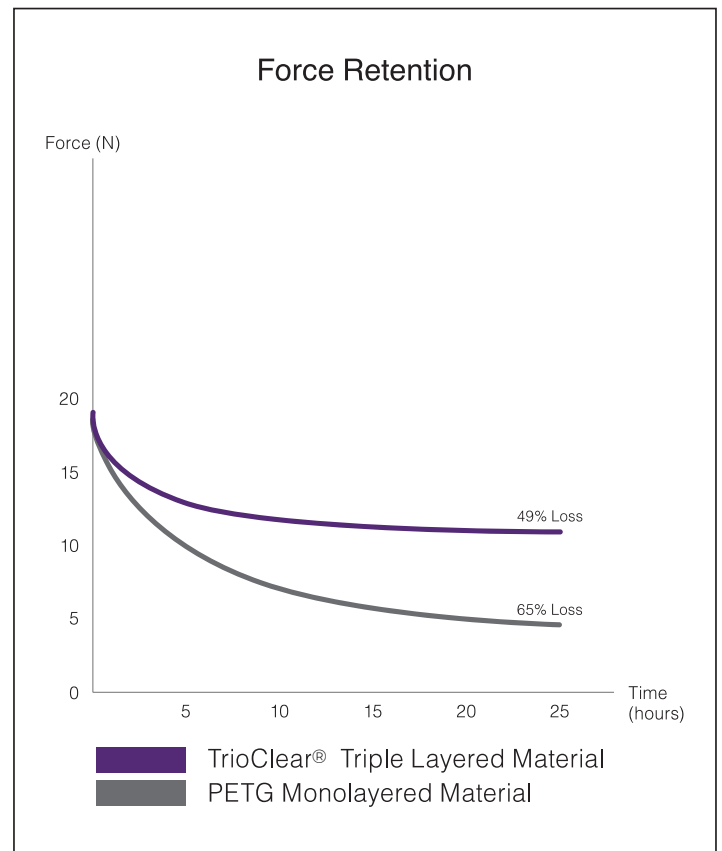


TrioClear® progressive clear aligner system received US Food and Drug Administration (FDA) 510(k) clearance for the treatment of teeth malocclusion in patients with permanent dentitions. Utilising a series of soft and hard aligners for incremental tooth movements, it sequentially positions teeth with gentle force safely and effectively.



3. IMPROVED TEAR RESISTANCE

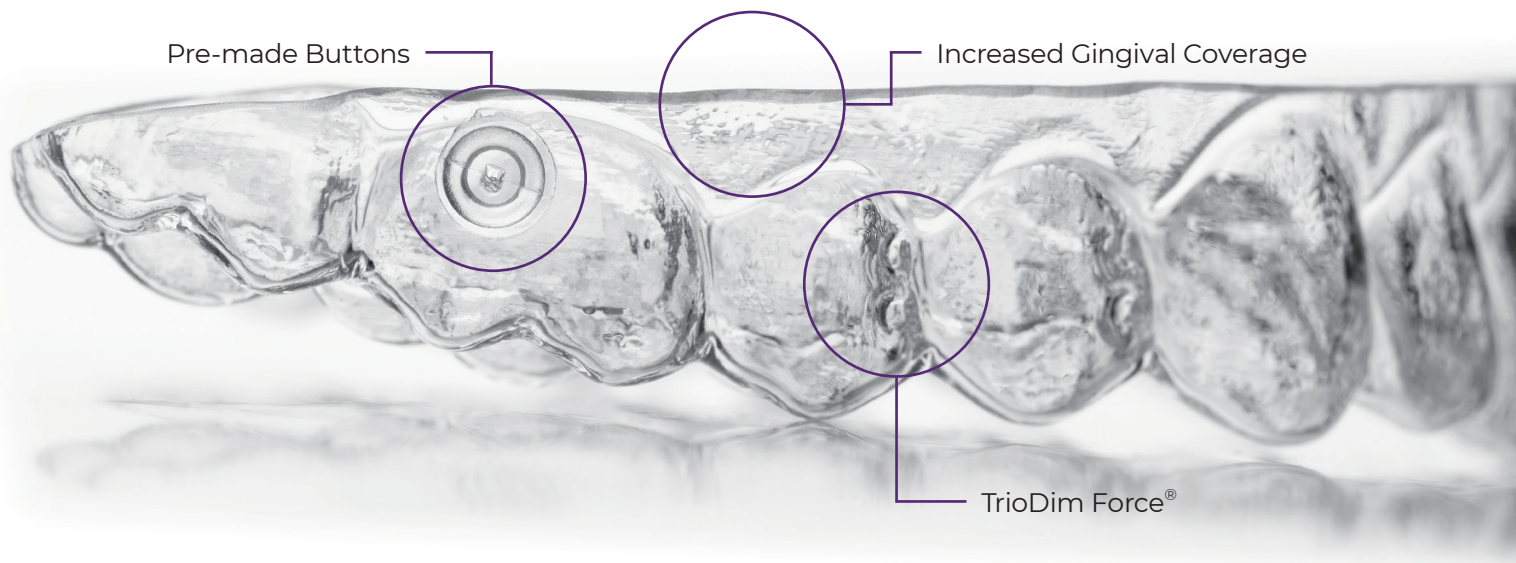
Studies show that the new triple-layered material with elastomers improves its tear resistance properties – making it more durable than other monolayered materials.



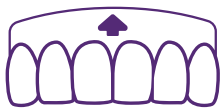
4. ENHANCED FORCE RETENTION

The new material can exert more orthodontic force over a longer period. This makes it easier to predict planned tooth movements – as the material continuously generates orthodontic forces over a longer period.

Streamlined Treatment for Straighter Teeth



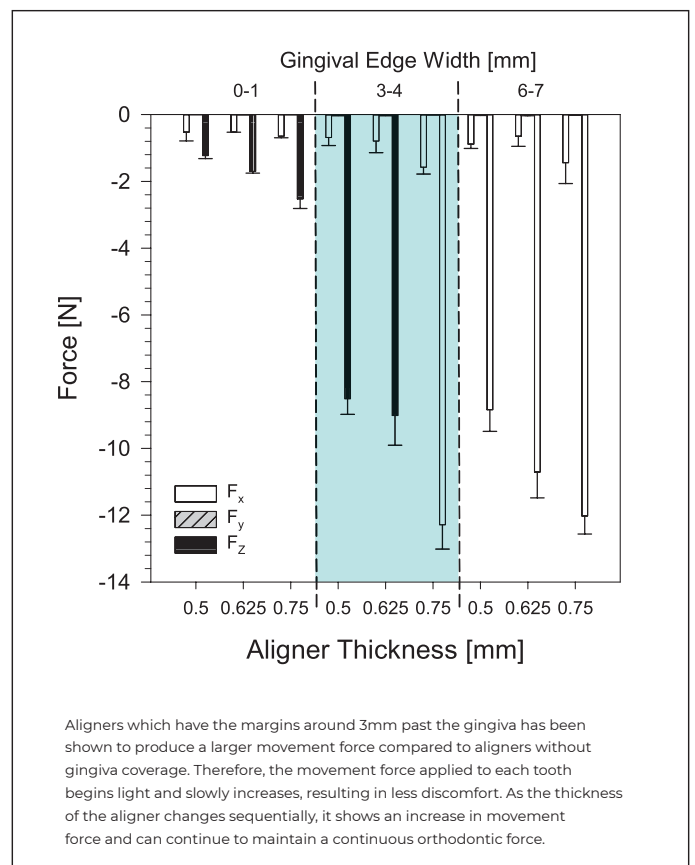
Increased Gingival Coverage



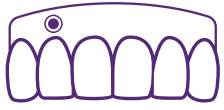
Extended gingival coverage means the aligners can cover a larger amount of area – particularly for teeth with short crown height. The margins of the aligners are also less visible, which makes for a better aesthetic. Studies have shown that aligners with margins that cover the gingiva have increased retention – compared to clear aligners with margins that follow the scallop of the teeth³.

This coverage also increases orthodontic forces in an acceptable amount. It gives our technicians room to make pre-formed buttons directly on every aligner – saving chair time since there’s no need to bond (and no risk of debonding).

We know that non-gingival coverage aligners have benefits for some situations, though. So you’re welcome to choose scalloped margins on request as well.



Pre-Made Buttons Directly on Aligner

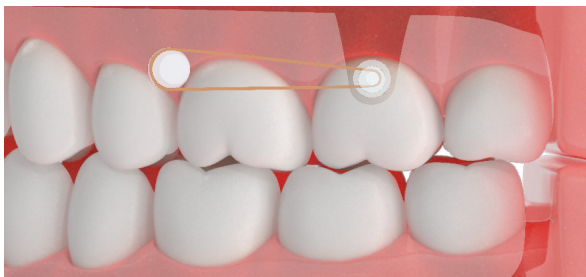


We place buttons directly on TrioClear® aligners that work with elastics and auxiliaries, reducing the risk of debonding that might happen when buttons are placed directly on your patients' teeth. This also means less chair time in your practice, or emergency patient visits.

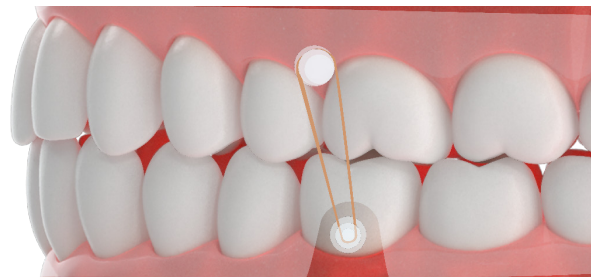
Our approach also makes different biomechanics possible. Buttons can be pressed higher in the gingival coverage area – and additional cutouts and engagement hooks on the aligners are also possible for certain tooth movements.

CLINICAL APPLICATIONS OF PRESSED BUTTONS

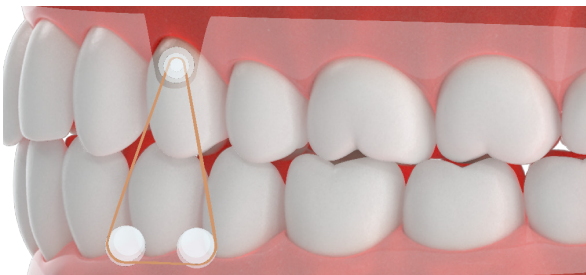
With the integration of pressed buttons on TrioClear® aligners, clinical applications can be effectively addressed. These innovative features enhance treatment versatility, enabling precise tooth movement and improving overall orthodontic outcomes.



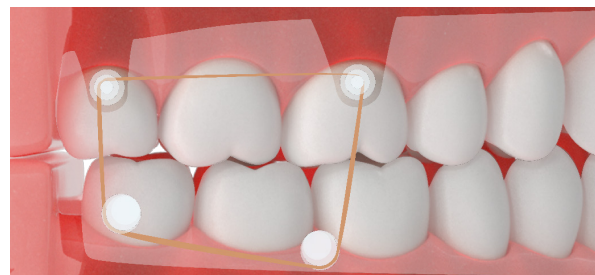
RETRACTION ELASTICS



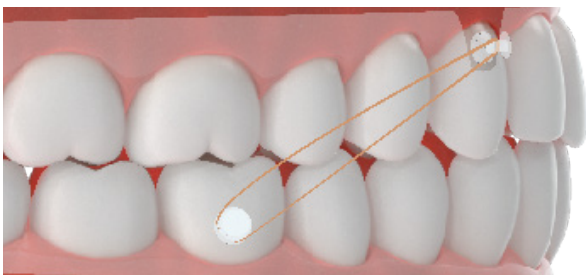
VERTICAL ELASTICS



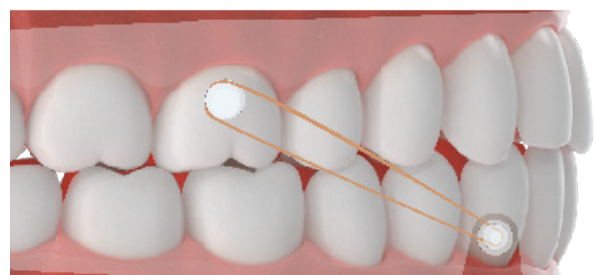
TRIANGULAR ELASTICS



BOX ELASTICS



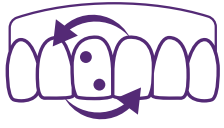
CLASS II ELASTICS



CLASS III ELASTICS

Reference:
3. Lixia Gao and Andrea Wichelhaus (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

TrioDim Force™ Technology



Our experienced technicians implement TrioDim Force™ technology in all TrioClear® cases. This means divots will be designed at very specific locations – depending on the specific movement required.

Every divot is measured and specifically placed with special instruments for the most precise location. Here's a simple summary of different movement and the corresponding location of the divots.

Minimal Attachments



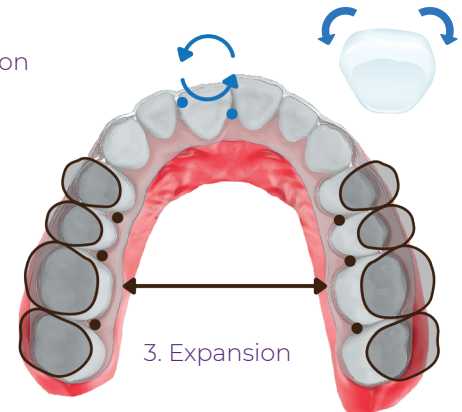
Attachments used in other clear aligner brands take up precious clinical time, as you need to apply them first – and then reapply them when they dislodge. Not only that, they can be easily stained or not fit as ideally as they should do because of excessive flush on the attachments.

Our TrioDim Force™ technology means we can use minimal attachments and still generate predictable and effective results, making it easier for you to achieve aesthetic results for your patients.

1. Tip Control

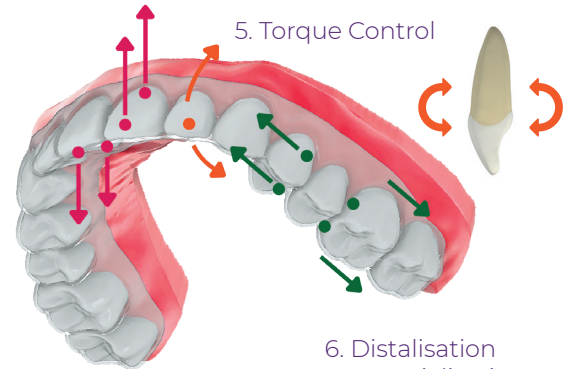


2. Rotation



3. Expansion

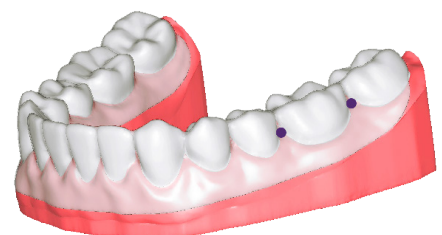
4. Proclination
& Lingualisation



5. Torque Control

6. Distalisation
& Mesialisation

7. Retention



Advanced Capabilities of Aligners

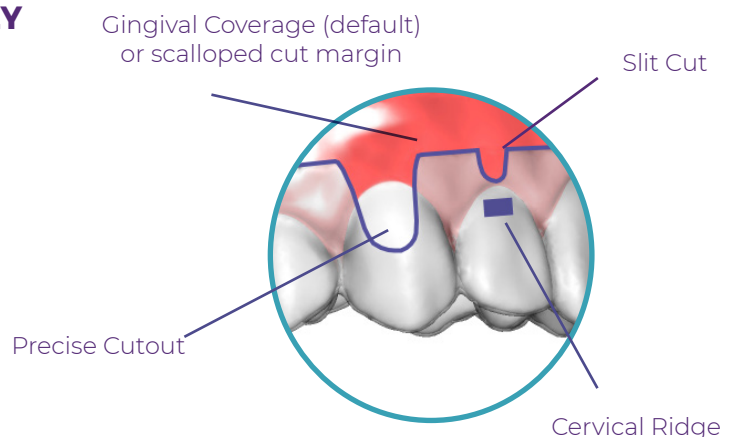
ENHANCING EFFICACY WITH GINGIVAL COVERAGE

The gingival coverage facilitates the precise placement of essential features such as bite blocks, slit cuts, and direct aligner buttons, ensuring improved retention and performance of the aligners. By utilising this approach, doctors can enhance the overall effectiveness of clear aligner treatment, ultimately leading to better treatment outcomes for their patients.

Increased Gingival Coverage	Scalloped Cut Margin
<p>Extended area for anterior bite block placement.</p>	<p>Less area and flexibility for placement of bite blocks.</p>
<p>Slit cuts for elastic engagement can be higher, allowing aligners to have full buccal coverage.</p>	<p>Slit cuts will compromise full buccal coverage of aligner. Does not allow concurrent attachment on the same tooth.</p>
<p>Pressed buttons can be applied higher on gingival area. Allows more flexibility in exerting vertical vector force without the use of TADs.</p>	<p>Less flexibility in exerting vertical vector force or else temporary anchorage devices (TADs) are required.</p>
<p>With gingival coverage, the stability of the cervical ridges for root torque comfort is improved.</p>	<p>With scalloped cut margin, cervical ridges are easily deflected outwards therefore losing force pressure.</p>

MULTIPLE FEATURES ALLOWED VERTICALLY

TrioClear® is tailored to fit more than two features without any deterioration in the fit of the aligner. For example, a slit cut and a cervical ridge on the same tooth.



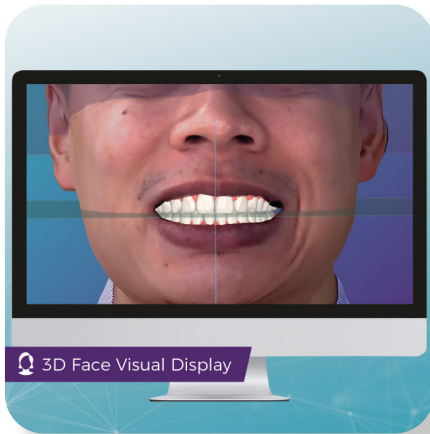
Trio iDesign™ Software



TRIO
iDesign

ENHANCING EFFICACY WITH GINGIVAL COVERAGE

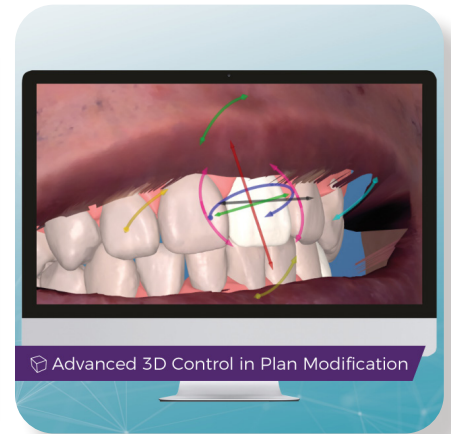
Trio iDesign is an advanced web-based 3D simulation software transforming the way you view, modify, and approve TrioClear® treatment plans. Experience our groundbreaking new features in Trio iDesign™ 2.0. It seamlessly integrates face scan and CBCT into the planning process. By incorporating scans from compatible scanners, our software offers a comprehensive and realistic treatment planning experience. Make informed decisions and tailor treatments for optimal results.



3D Face Visual Display



Jaw Bone & Tooth Roots Display



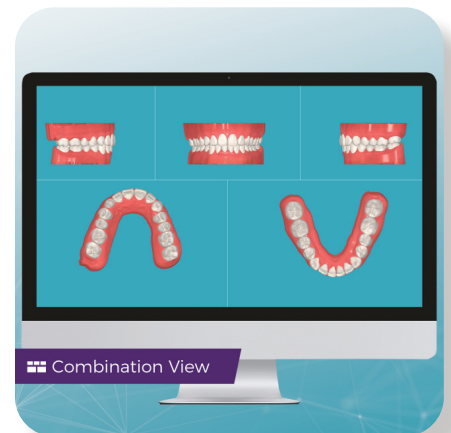
Advanced 3D Control in Plan Modification



MDI (Movement Difficulty Indicators)



Overjet / Overbite Analysis



Combination View



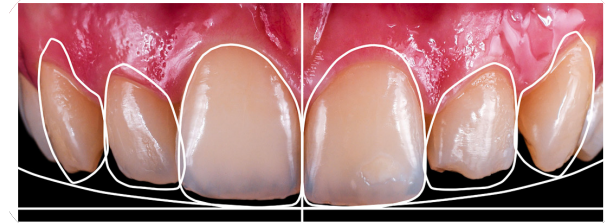
SCAN TO DISCOVER VIDEOS OF
TRIO IDESIGN 2.0

Reference:
4. Korkut, B., Unal, T., Murat, N., & Özcan, M. (2023). Effect of prerestorative short-term clear aligner therapy in restorative treatment planning. The Journal of Prosthetic Dentistry. <https://doi.org/10.1016/j.prosdent.2023.02.024>

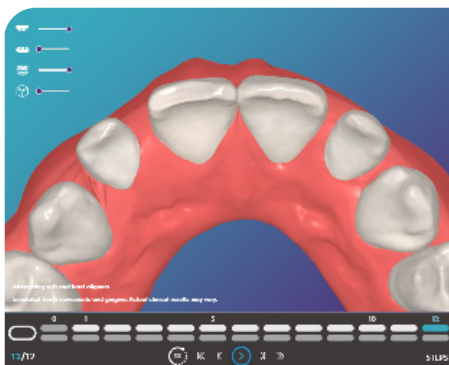
Integrative Smile Design

ONE STOP SOLUTION: INTEGRATING RESTORATIVE TREATMENTS WITH TRIOCLEAR®

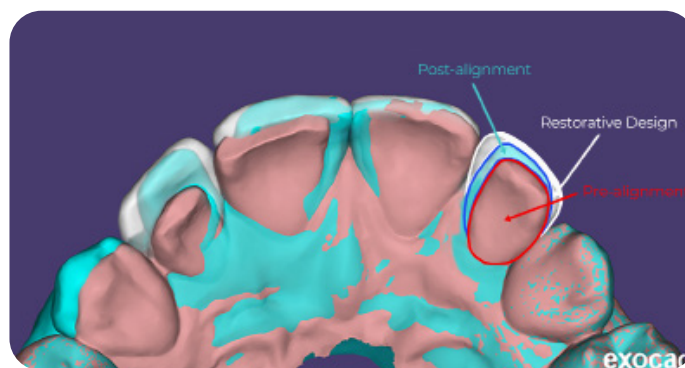
Achieving optimal aesthetics in restorative dentistry while minimising invasiveness is challenging. Pre-restorative clear aligner therapy enhances treatment planning by aligning teeth and reducing the need for extensive procedures⁴. TrioClear® offers this innovative approach through our Submission Portal, allowing effective integration of clear aligner therapy with restorative options. Our portal streamlines communication and planning, enhancing productivity and reducing chair time while connecting doctors to restorative products.



Clear Aligner Treatment Plan



Restorative Treatment Plan



Side by side comparison of the clear aligner treatment plan and the actual restorative treatment plan.

COMBINED ORTHODONTIC AND RESTORATIVE TREATMENT

- **Predictable Treatment Outcomes**

Accurate planning and monitoring help achieve orthodontic and restorative goals effectively.

- **Optimised Restoration Placements**

Pre-restorative alignment allows ideal positioning the teeth, allowing equal and proper thickness of future ceramic restorations without affecting aesthetics.

- **Minimally Invasive Approaches**

This integrative strategy preserves healthy tooth structure, reducing extensive procedures and chair time.

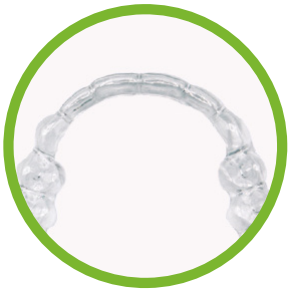
- **Enhanced Aesthetic Outcomes**

Well-aligned foundations from clear aligners lead to more predictable and visually satisfying cosmetic results.

Ecodont® Retainers are orthodontic appliances made from BPA-free material. Each order includes 3 sets and comes with 3 months warranty and a retainer case. Ecodont® Retainers are 1.0mm thick, using the strongest triple-layered material among all TrioClear® products.

TAILORED TO PERFECTION- CUSTOMISING THE ECODONT® RETAINERS

Delivering a true personalised retainer has never been easier. Our Submission Portal empowers you to customise the Ecodont® Retainers to meet the unique needs of each patient.



CUTOUT FOR THE
FIXED LINGUAL /
PALATAL WIRE



ESTHETIC PONTIC

The Ecodont® Combi Retainers offer doctors an innovative dual-function solution with strengths of both solutions: a clear, removable retainer and a fixed lingual / palatal wire in the same appointment. With a single scan, doctors can streamline the workflow, reduce chair time, and achieve reliable, long-term retention for the patients.

SINGLE SCAN EFFICIENCY

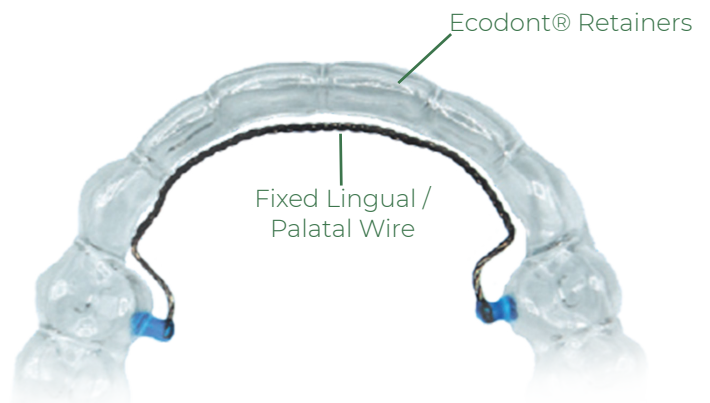
Only a single scan is needed for both the removable and fixed components.

COMFORT & PRECISION

Ensure optimal patient comfort, precise treatment outcomes, and enhanced durability for long-lasting results.

ECO-FRIENDLY DESIGN

Made from BPA-Free materials, using sustainable production practices that reduce waste and minimize environmental impact.



Fixed Lingual /
Palatal Wire

Ecodont® Retainers



This Is the Science Behind the TrioClear[®] Process.

Ready to see how they can help you and your patients make incredible progress?



**Triple-Layered
Material**

BPA^{FREE}

Bisphenol-A Free



1.0mm Thickness

Better for Your Patients. And the Planet.



Ten Trees Planted for Each Case



Feel comfortable that you are contributing to a sustainable future with a tree planted for every case.

At TrioClear® Australia and New Zealand, we care about the planet and aim to be a responsible, eco-friendly brand.

Through our partnership with One Tree Planted, we plant 10 trees for every finished TrioClear® case, supporting local reforestation across Australia and New Zealand.



**19,650 trees planted across
Australia and New Zealand*.**

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