White Paper

The OnBRACE® Orthodontic Appliance

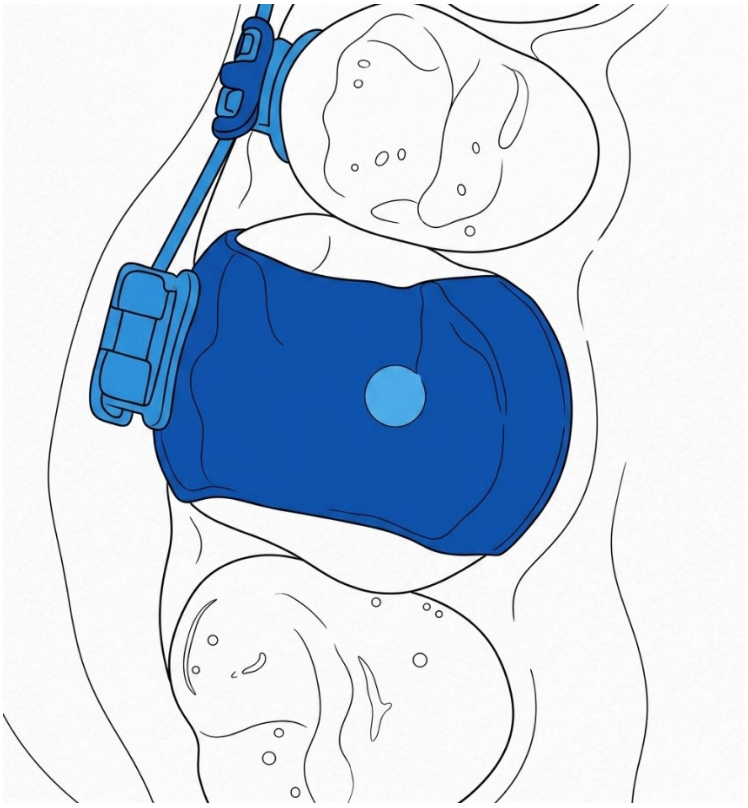
A Next-Generation Fixed Anchorage System by Specialty Appliances

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Executive Summary

The OnBRACE® system represents a significant advancement in fixed orthodontic appliance design, combining digital manufacturing, biomechanical innovation, and patient-centered engineering. Developed through collaboration between Specialty Appliances and Dr. Michael Johnston, OnBRACE® is a patented, laser-sintered metal appliance designed to improve anchorage control, eliminate separator requirements, and enhance treatment efficiency across a wide range of malocclusions.

This white paper outlines the clinical rationale, design architecture, applications, and benefits of the OnBRACE® system for modern orthodontic practices.



1. Introduction

Orthodontics continues to evolve toward greater efficiency, precision, and patient comfort. Traditional fixed appliances—particularly banded molar systems—often require separators, introduce interproximal discomfort, and can produce unwanted side effects such as molar extrusion.

The OnBRACE® system was engineered to address these limitations through a novel "saddle-style" posterior attachment and advanced manufacturing techniques. It is positioned as a versatile anchorage platform compatible with expansion, distalization, and Class II correction protocols.



2. Technology Overview

2.1 Design and Manufacturing

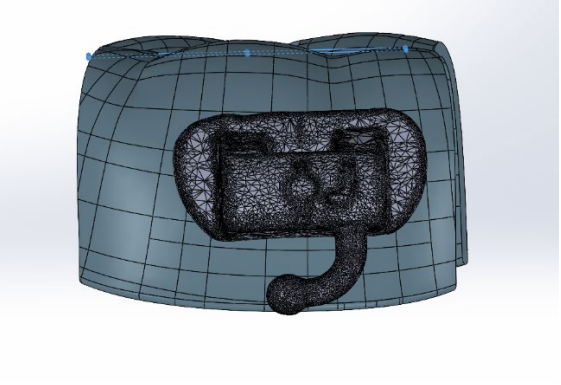
OnBRACE® is a **metal laser-sintered fixed orthodontic appliance** that sits on posterior teeth without extending interproximally.

Key design characteristics include:

- **Saddle-based architecture**: Eliminates mesial and distal metal intrusion
- **No separator requirement**: Reduces patient discomfort and appointments
- **Occlusal metal**: Acts as a bite turbo and allows for molar intrusion
- **Occlusal hole**: Enables efficient light curing of dual-cure cement
- **Increased metal thickness**: Stronger than traditional bands

The additive manufacturing approach allows for highly precise, reproducible appliances that are offered in varying sizes.



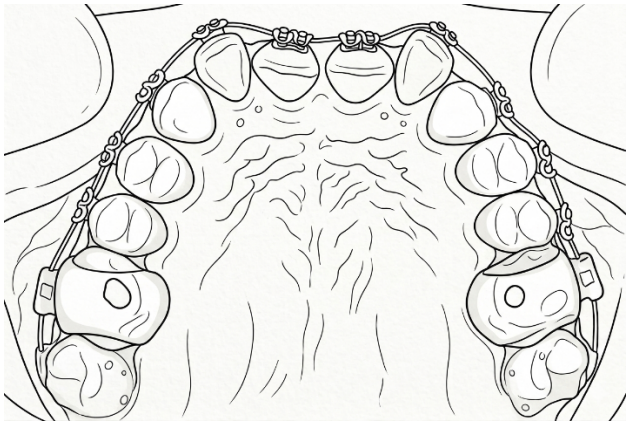


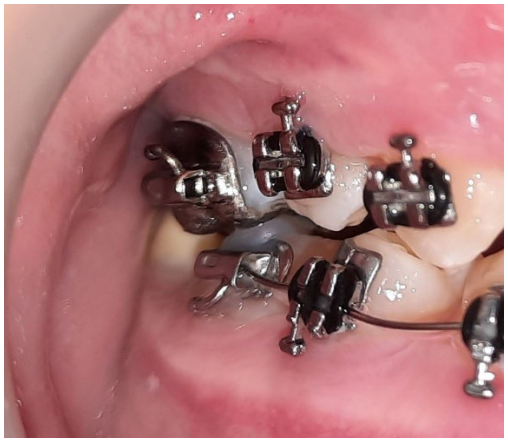
2.2 Biomechanical Principles

The OnBRACE® system integrates advanced orthodontic biomechanics to improve treatment outcomes:

- **Anchorage versatility**: Allows for use even with operculum present
- **Vertical control**: Reduces molar extrusion; can produce molar intrusion (~1 mm) beneficial in open bite cases
- **Bite turbo effect**: Occlusal coverage assists in managing deep bite conditions
- **Predictable performance**: Controlled force delivery when paired with expanders

These features collectively enhance the clinician's ability to manage complex cases with greater precision.





3. Clinical Applications

The OnBRACE® system is designed for broad clinical versatility.

3.1 Indications

- Individual fixed appliance use with buccal tubes
- Anchorage for all orthodontic appliances
- Deep bite cases as a bite turbo
- Open bite cases requiring vertical control
- Noncompliant patients





3.2 Appliance Compatibility

OnBRACE® integrates seamlessly with multiple orthodontic appliances, including:

- Hyrax expanders
- Quad Helix appliances
- Herbst appliances
- MARA appliances
- Transpalatal arches





This compatibility allows clinicians to incorporate OnBRACE® into existing workflows without disruption.

4. Clinical Performance and Outcomes

4.1 Treatment Efficiency

- Eliminates separator appointments, reducing chair time
- Streamlines bonding and delivery processes
- Supports early initiation of active treatment

4.2 Patient Experience

- Reduced discomfort due to absence of interproximal pressure
- Improved oral hygiene compared to traditional banding systems
- Enhanced overall comfort and acceptance

4.3 Case Outcomes

Clinical use demonstrates:

- Effective molar intrusion and anchorage preservation
- Improved control of vertical dimension
- Predictable expansion and alignment results
- Improved patient acceptance and comfort

In documented cases, the appliance achieved measurable **molar intrusion** and maintained anchorage during complex orthodontic correction.

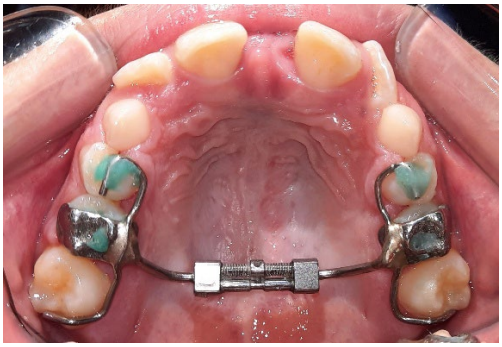


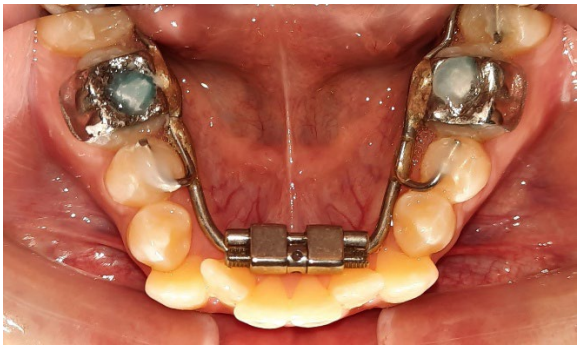
OnBRACE® appliance removal demonstrates molar intrusion.

5. Advantages Over Traditional Systems

Feature	Traditional Bands	OnBRACE® System
Separator Requirement	Yes	No
Interproximal Metal	Present	None
Patient Discomfort	High	Minimal
Anchorage Control	Variable	Enhanced
Vertical Control	None	Superior

The elimination of interproximal metal intrusion is a defining innovation, significantly improving both clinical workflow and patient comfort.





6. Practice Integration

6.1 Workflow Integration

Orthodontists can incorporate OnBRACE® by:

1. Submitting digital or traditional models to the lab
2. Selecting OnBRACE® as an anchorage option
3. Receiving a customized appliance for delivery

6.2 In-House Laboratory Option

Practices with in-house labs can purchase OnBRACE® kits for on-demand fabrication and delivery, increasing operational flexibility. In addition, Pedo OnBRACE® is now available.

7. Market Position and Strategic Value

The OnBRACE® system is patent protected in the United States, offering a differentiated solution in a competitive orthodontic market.

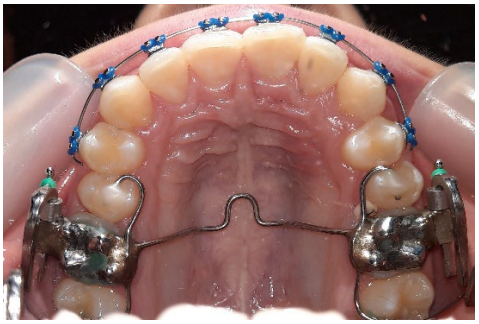
Strategic benefits for practices include:

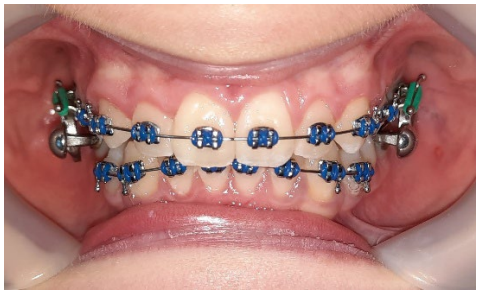
- Differentiation through advanced technology
- Increased patient satisfaction and referrals
- Scalability across diverse case types
- Alignment with digital orthodontic workflows

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8. Future Implications

As orthodontics continues to shift toward **customized, minimally invasive, and digitally driven solutions**, systems like OnBRACE® are expected to play a central role. Its integration of additive manufacturing and biomechanical optimization positions it as a foundational platform for future innovation in fixed appliance therapy.




9. Conclusion

The OnBRACE® appliance represents a paradigm shift in fixed orthodontic appliances and orthopedic appliances in the orthodontic office. By eliminating separators, enhancing comfort, and improving biomechanical control, OnBRACE® addresses longstanding limitations of traditional banded appliances.

Backed by the expertise of Specialty Appliances and the clinical vision of Dr. Michael Johnston, OnBRACE® delivers a compelling combination of innovation, efficiency, and clinical effectiveness—making it a valuable addition to modern orthodontic practice.





