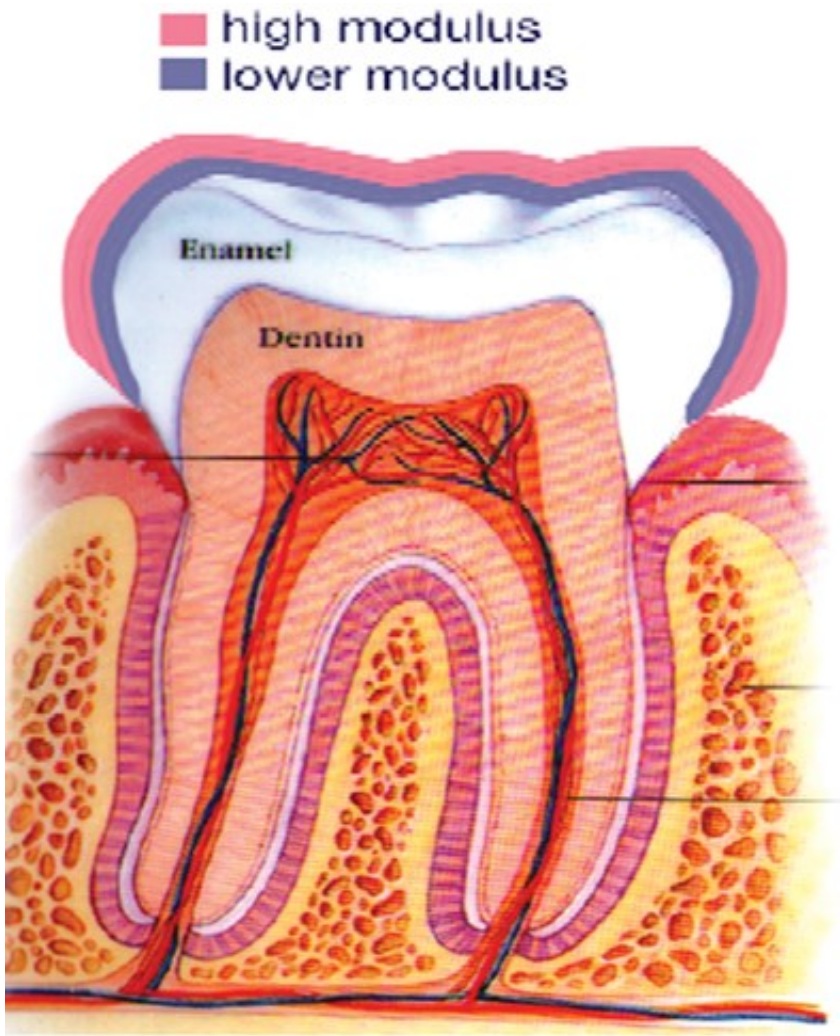
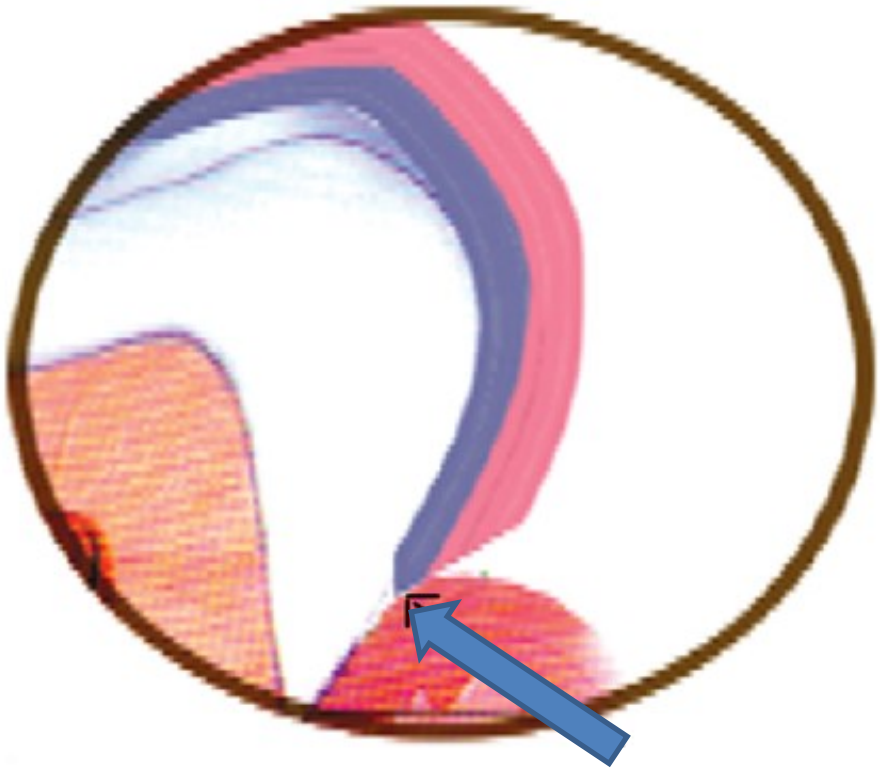
NUBRACE™

SCIENTIFIC RESEARCH PUBLICATIONS

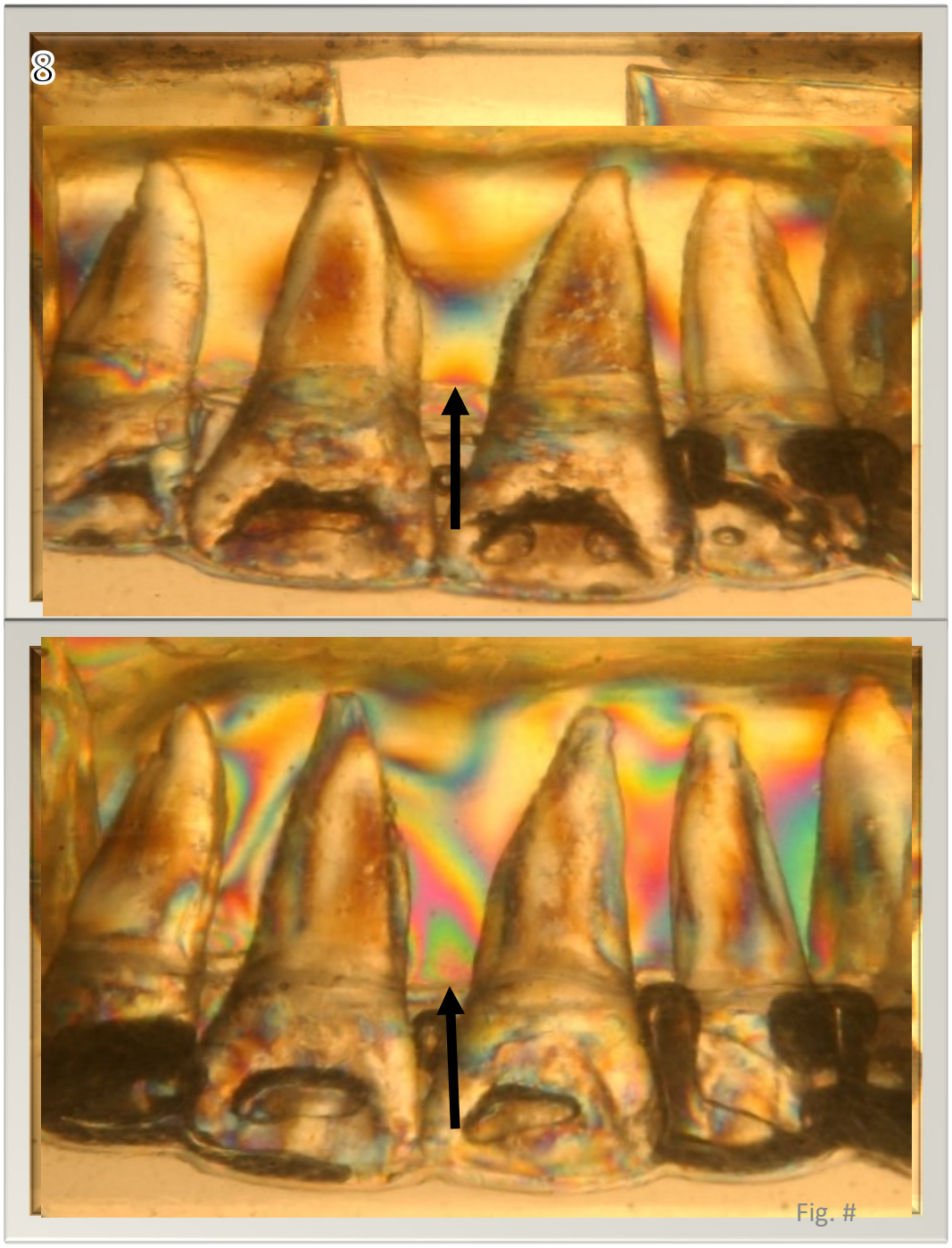
Internal flexibility; better marginal adaptation, less bacterial infiltration, greater retention





Better adaptation

Fig. # Less bacterial infiltration



NUBRACE SOFT LAMINATED APPLIANCE

Less stress to BODY PART and bone

UN-LAMINATED APPLIANCE

More fringe, greater stress to BODY PART and bone

NuBrace

UNIVERSITY RESEARCH #1

LOAD APPLICATION DURATION OF BILAMINATE ALIGNER MATERIAL

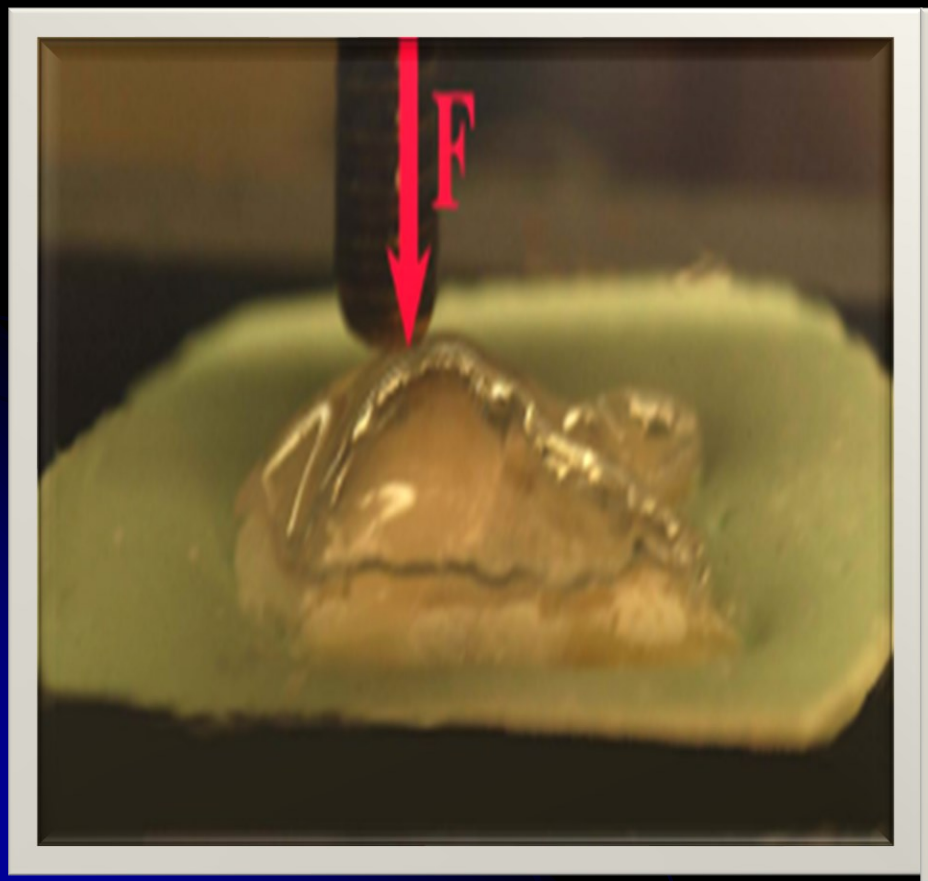
T. Kalili, A.A. Caputo, D. Nathanson, et al
Division of Advanced Prosthodontics,
Biomaterials Science UCLA School of Dentistry
Harvard School of Dental Medicine

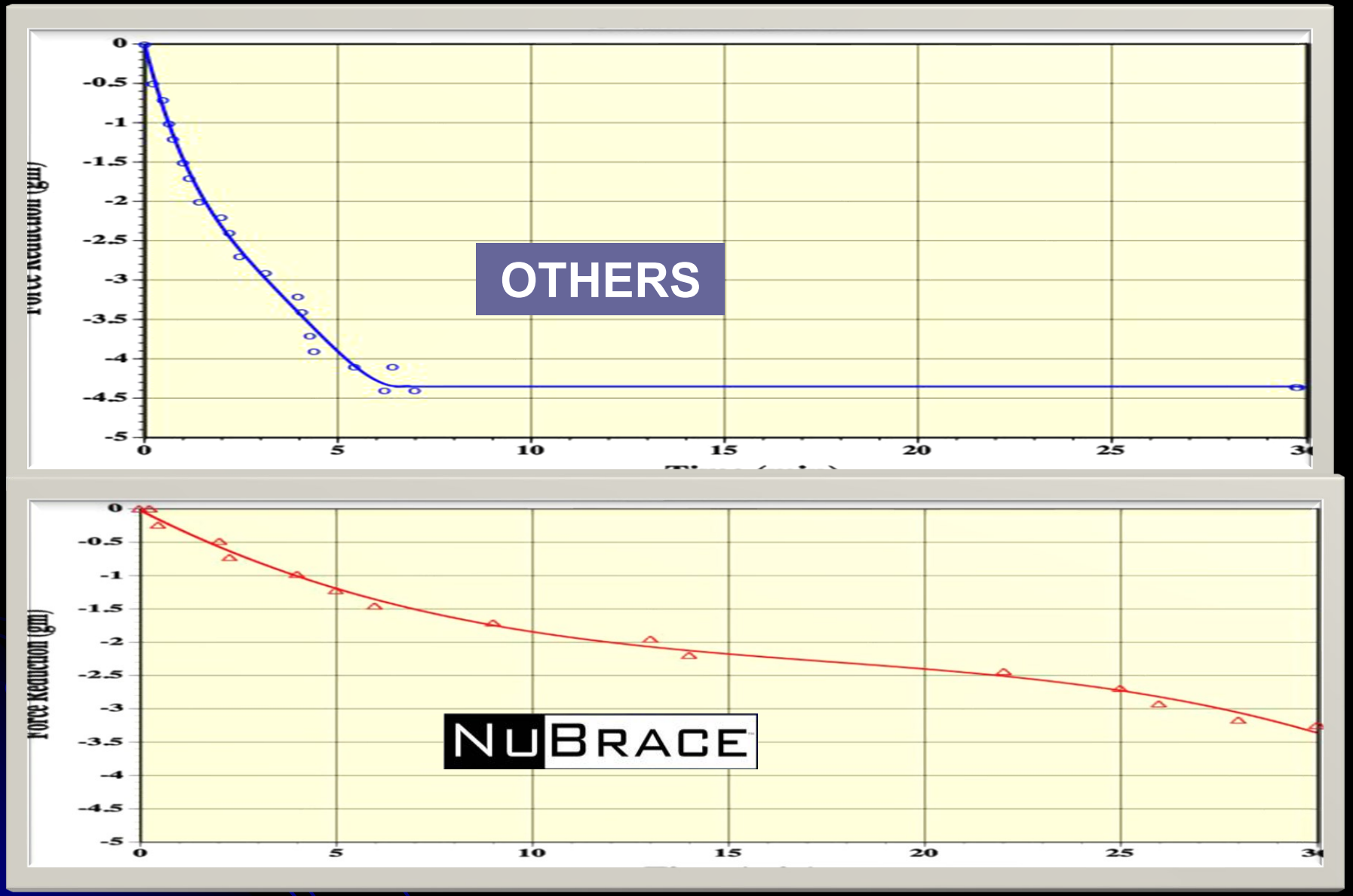
Purpose

Assess duration of force application of orthodontic aligner

with and without a soft inner lining

DISSAPATION OF FORCE WITH TIME USING SINGLE AND DUAL LAMINATES





NuBrace demonstrated more gradual and >2 times longer duration of tooth movement v. the alternative unlaminated aligner.

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DISCUSSION

- #1 concern of orthodontics is root and bone resorption minimized by gradual tooth movement.
- Longer duration of tooth movement leads to less chair time.

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UNIVERSITY RESEARCH #2

Biomechanics of Clear Aligner with Soft Inner Layer

T. Kalili, A.A. Caputo, D. Nathanson, et al

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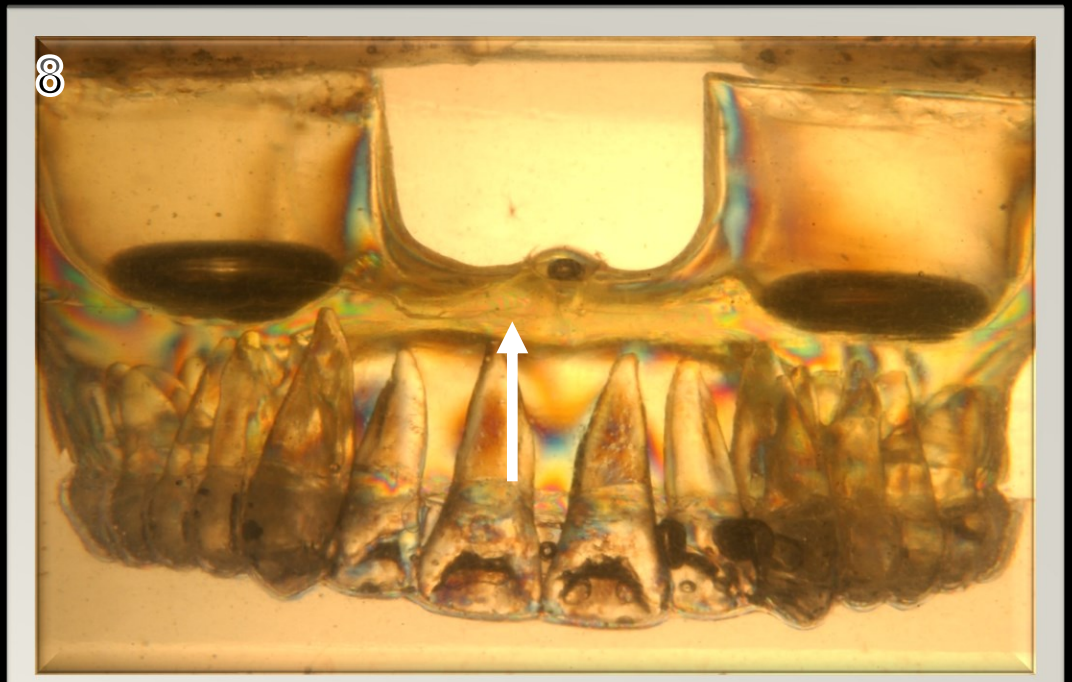
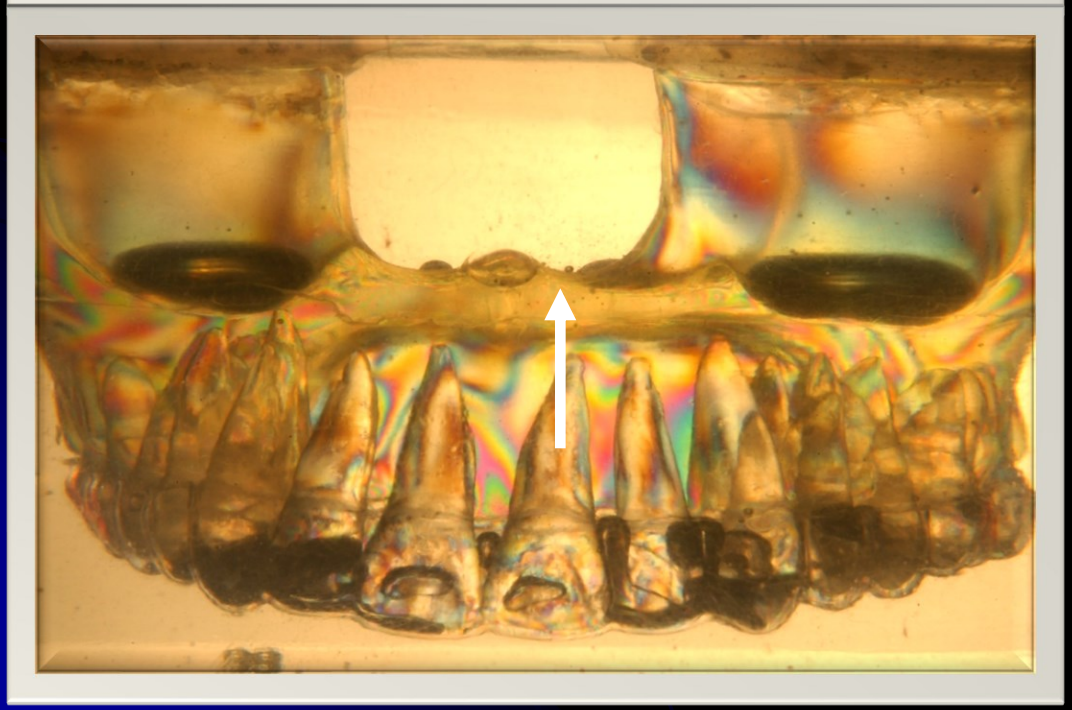
Biomaterials Science UCLA School of Dentistry
Harvard School of Dental Medicine

INTRODUCTION

Aligners may have patient discomfort and difficulty of application. Soft laminated aligner may alleviate these effects.





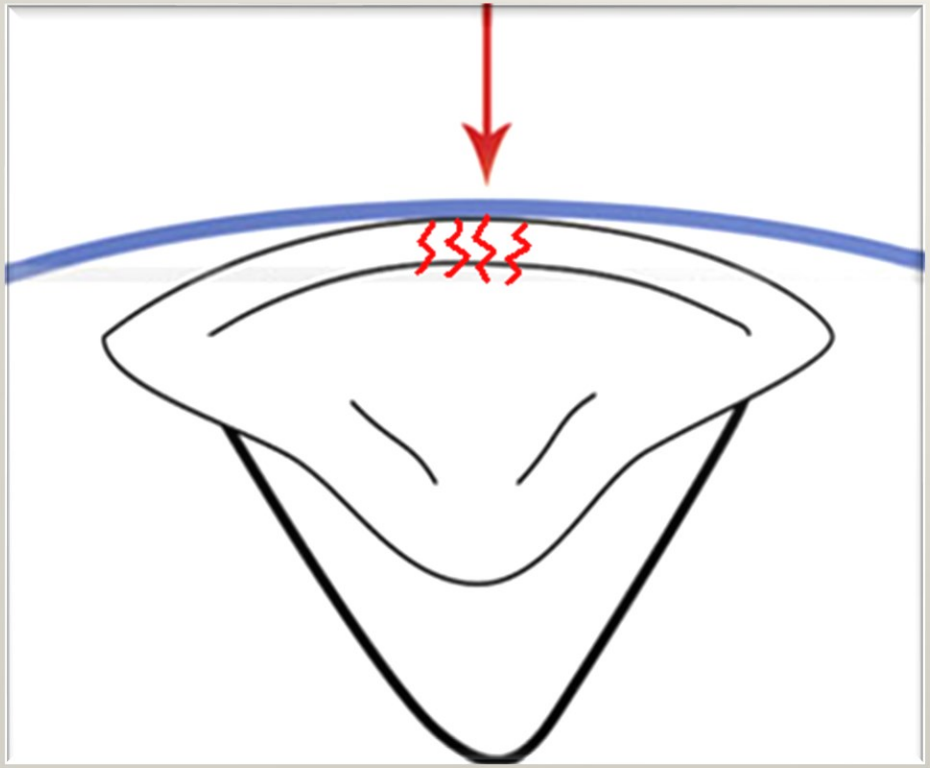
NUBRACE SOFT LAMINATED ALIGNER

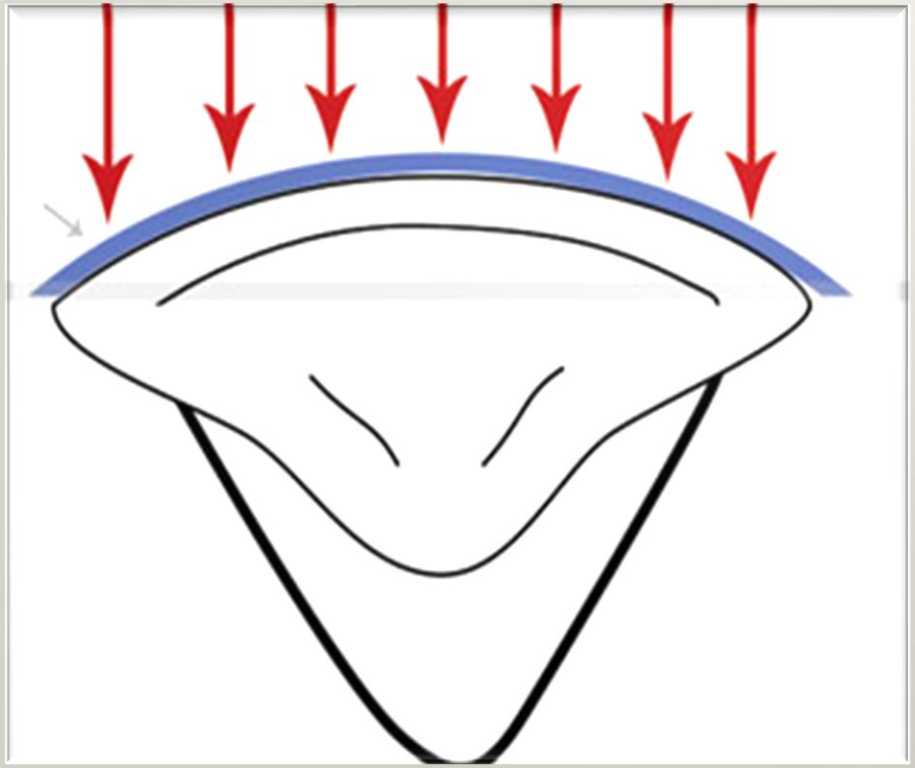
Less stress to teeth and bone

UN-LAMINATED ALIGNER

More fringe, greater stress to teeth and bone

SAME FORCE
LESS STRESS





ALTEN

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DISCUSSION

Laminated aligner demonstrated lower stress and propensity for greater patient comfort

UNIVERSITY RESEARCH #3

1270 Laminated Orthodontic Removable aligner for Molar Uprighting

T. Kalili, A.A. Caputo, et al
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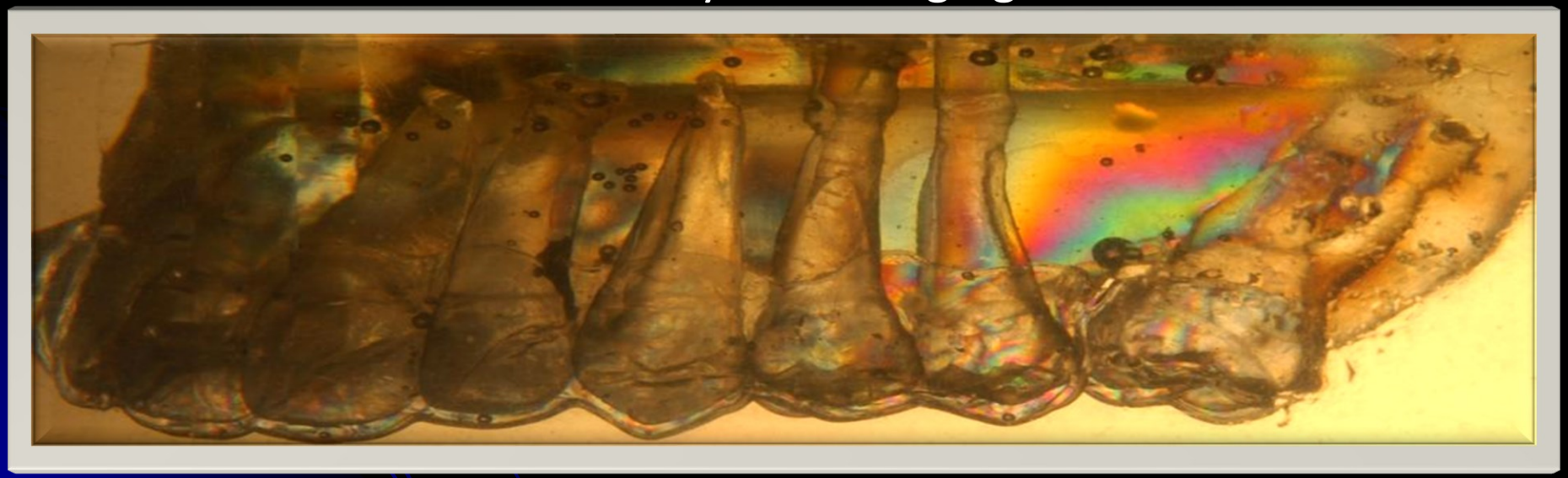
Biomaterials Science UCLA School of Dentistry

Laminated Orthodontic Removable aligner for Molar Uprighting

Conventional orthodontic molar uprighting appliance

NuBrace clear aligner for molar uprighting

ABOVE – Conventional molar uprighting appliance showing significant localized tensile stress which may be damaging to teeth and bone.



ABOVE – NuBrace showing more uniform areas of stress to allow for a more gradual load with less localized stress to teeth and bone.

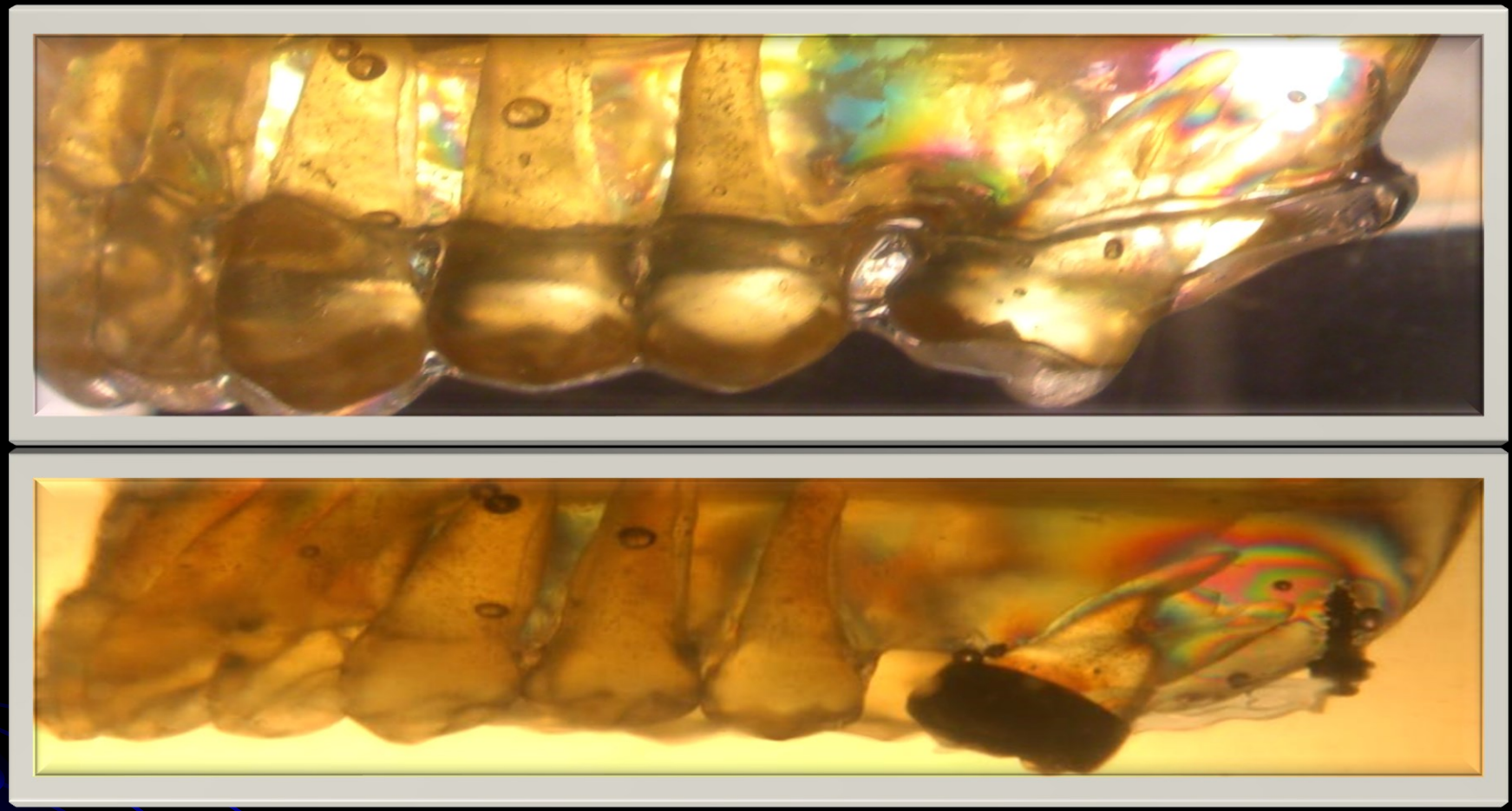
UNWANTED STRESS IN UNWANTED AREAS

ABOVE – Conventional molar uprighting appliance showing unwanted stress in the anterior sextant unrelated to molar uprighting.

ABOVE – NuBrace does not require attachments + or arch bows for tooth movement therefore, minimal stress in unrelated areas.

DISCUSSION

1. Conventional appliance demonstrated greater localized stress vs NuBrace which demonstrated more uniform stress.
2. Greater localized stress in the conventional appliance may lead to greater bone and root resorption.



NuBrace and fixed orthodontics tested for molar uprighting tooth #15 using micro-surgical implant as a distal anchorage. NuBrace demonstrated more uniform stress distribution compared with high levels of localized forces seen with fixed orthodontics. NuBrace does not require attachments and therefore, is non irritant, non-invasive, less bacterial trap, less tissue irritant and greater esthetics.

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UNIVERSITY RESEARCH #4

Dissipation of Force Over Time Using NuBrace BAR v. Orthodontic Spring

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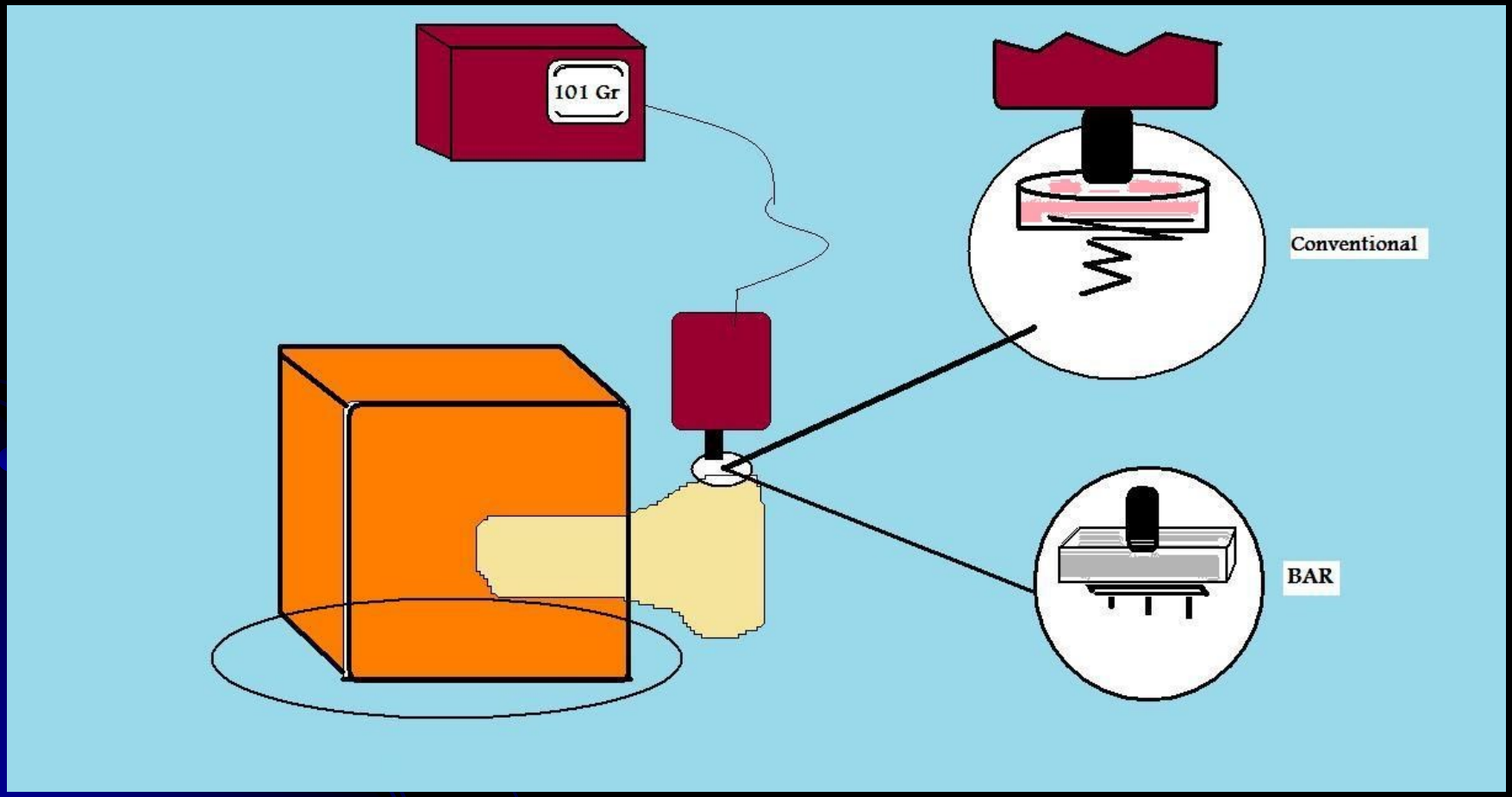
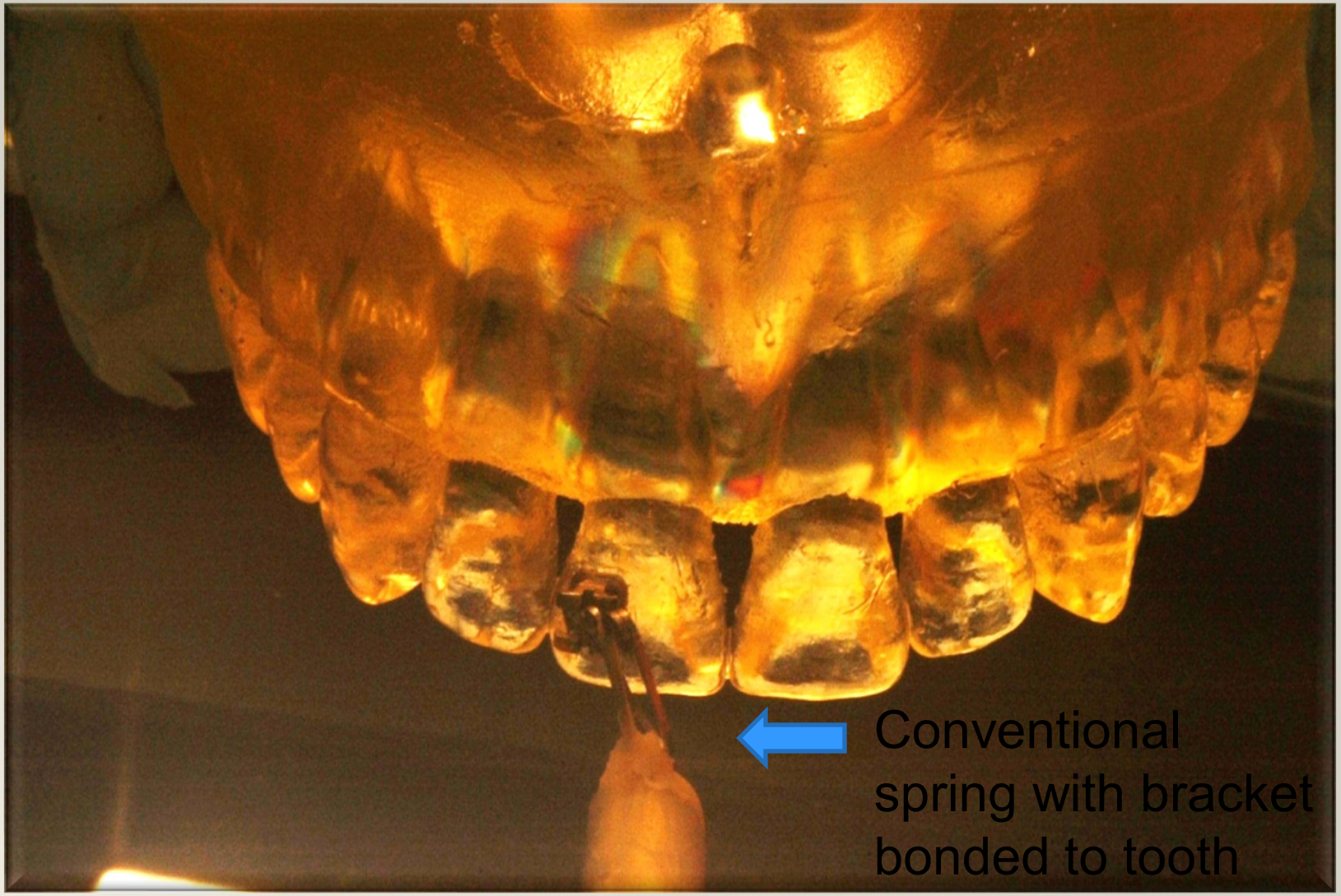
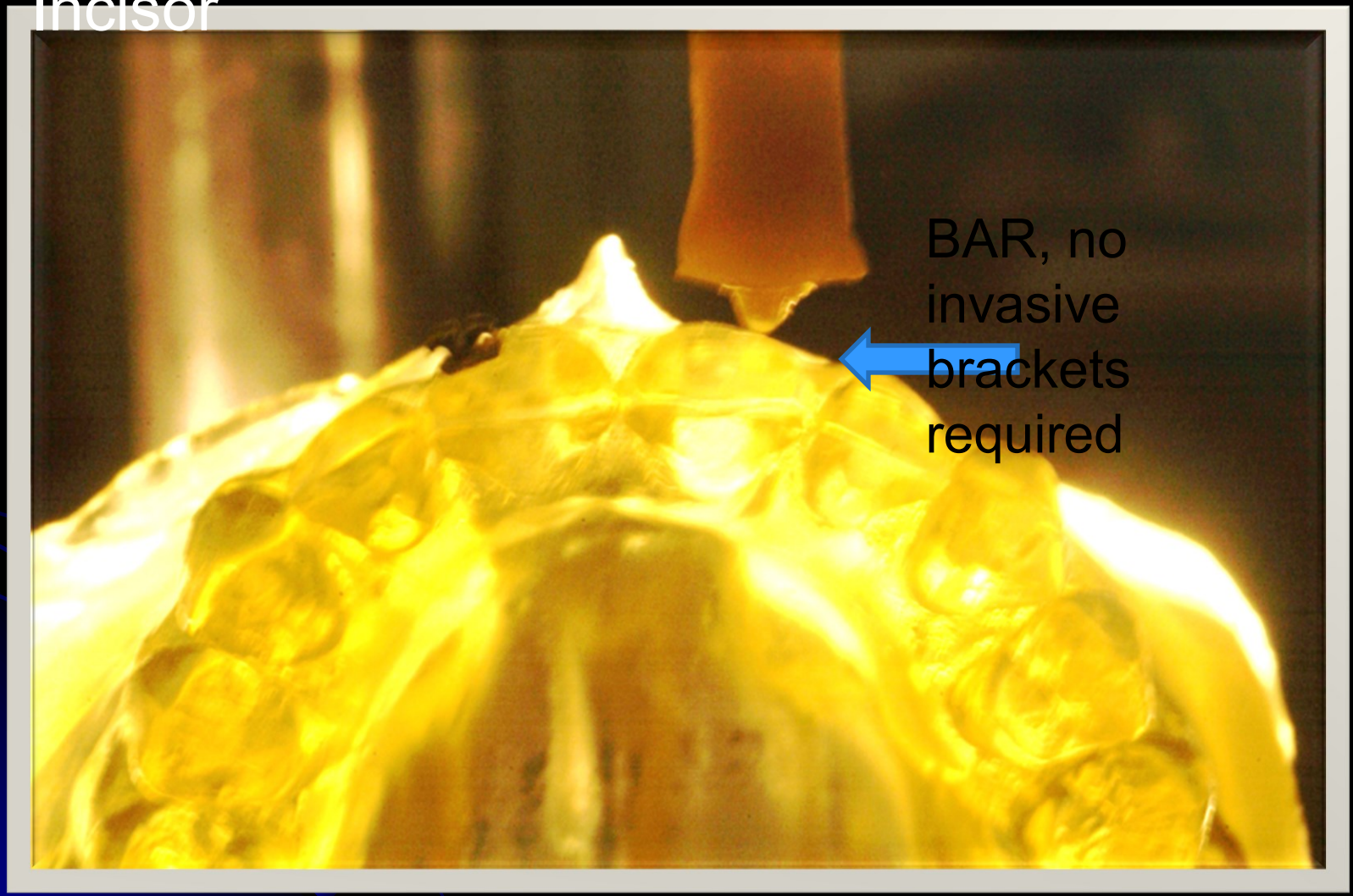
Dissipation of Force Over Time Using NuBrace BAR v. Orthodontic Spring

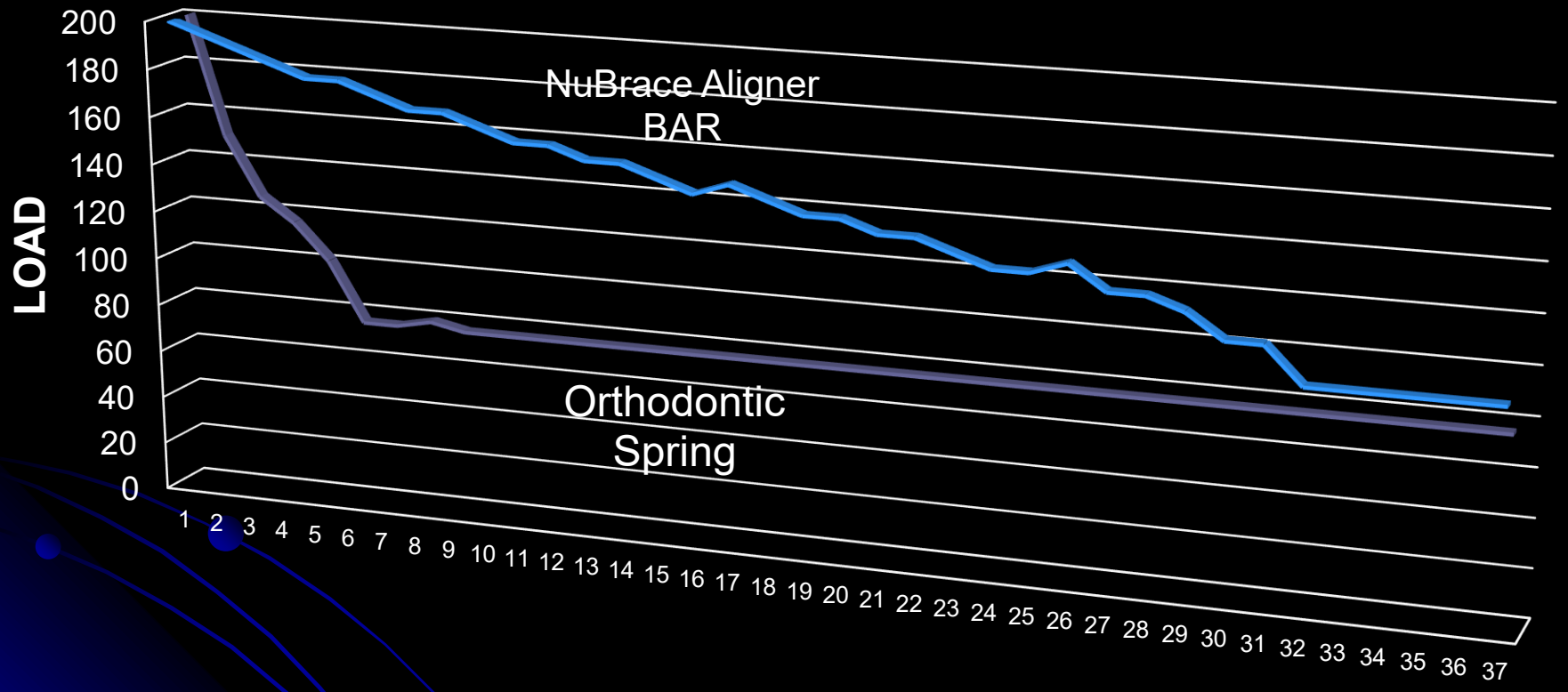



Conventional spring with bracket bonded to tooth

NuBrace BAR Demonstrating Load to Central Incisor



Dissipation of Force Over Time Using Polymer BAR v. Orthodontic Spring



Discussion

1. Results demonstrate that both conventional fixed orthodontic springs and NuBrace BAR exert similar stress to teeth and associated bone during rotational movement.

Discussion

2. Both spring and BAR demonstrated diminished load with time. However, the NuBrace BAR exerted load 3 times as long as the conventional orthodontic springs.

Discussion

3. Clinical implication is that there may be less adjustments / aligners required when using BAR as compared to conventional springs.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