AcceleDent® aura

EFFECT OF MECHANICAL VIBRATION ON RESISTANCE TO SLIDING IN THE FIXED ORTHODONTIC APPLIANCE

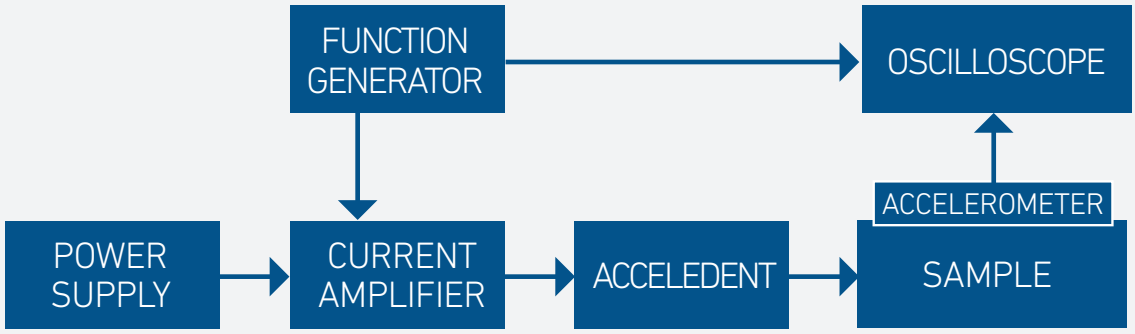
Kennedy D, Liu D. *Electronic poster session presented at: 2014 Annual Session of the American Association of Orthodontists; 2014 Apr 25-29; New Orleans, LA.*

PURPOSE

- To test the effect of vibration on the sliding resistance (i.e. friction and binding) of a fixed orthodontic appliance system.

METHODS

- Engineering bench test setup that simulated tooth structure with PDL layer
- Measured static and dynamic friction between 0.022" x 0.028" SS bracket and 0.016" x 0.025" NiTi wire with and without AcceleDent
  - Pulled wire at 5 mm/min for 7 mm



RESULTS

- With AcceleDent, static and dynamic friction between orthodontic wire and brackets in a fixed appliance system were reduced by 8.5% and 22.3% ($p<0.05$), respectively.
- Range of dynamic friction at 5 mm:
  - Control: 267-478g
  - AcceleDent: 210-345g

TREATMENT EFFICIENCY

EFFECT OF MECHANICAL VIBRATION ON RESISTANCE TO SLIDING IN THE FIXED ORTHODONTIC APPLIANCE

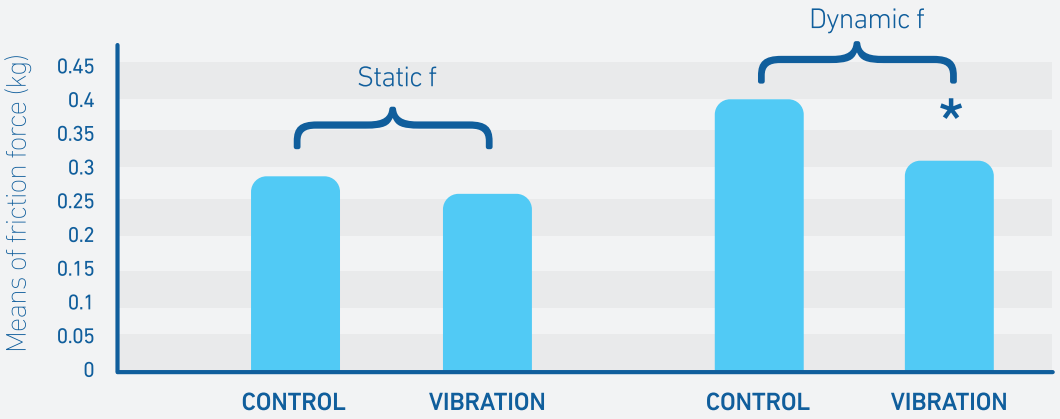
(Continued)

AUTHOR CONCLUSIONS

- Our data show that vibration (AcceleDent) reduces static and dynamic frictions between orthodontic wire and brackets in fixed appliance system by about 8.5% and 22.26%, respectively.

ACCELEDENT® AND EFFICIENCY OF FIXED APPLIANCES

AcceleDent may enhance efficiency of fixed mechanics by reducing friction



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*Liu D, Kennedy D. Effect of Mechanical Vibration on Resistance to Sliding in the Fixed Orthodontic Appliance. Electronic poster session presented at: 2014 Annual Session of the American Association of Orthodontists; 2014 Apr 25-29; New Orleans, LA.

☑ KEY POINT

AcceleDent may enhance the efficiency of fixed mechanics by reducing friction.

acceledent.com

OrthoAccel Technologies, Inc.
1.866.866.4919
sales@orthoaccel.com

OrthoAccel®

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